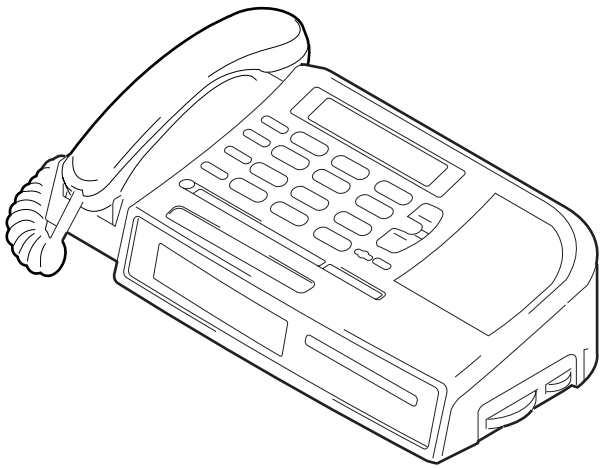
# SCT-ID10

# SERVICE MANUAL

*US Model*
*Canadian Model*

**Ver 1.0 1998.03**



## SPECIFICATIONS

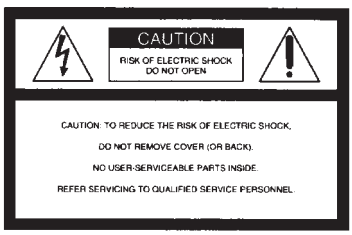
Frequency range
FM : 87.5 – 108 MHz
AM : 530 – 1,605 kHz
Speaker Approx. 6.6 cm (2 5/8 inches) dia., 8 ohms
Power output
100 mW (at 10% harmonic distortion)
Dial signal :
Tone, pulse selectable
Power requirements :
120V AC, 60Hz
For power backup :
9V DC, one 6F22 battery (Functions for clock radio only)
Battery life :
Approx. 35 hours using the Sony S-006P (U) battery
Dimensions :
Approx. 250 x 98.6 x 202 mm (w/h/d)
(9 7/8 x 4 x 8 inches) incl. projecting parts and controls
Mass Approx. 880g (2 lb. 31 oz) not incl. battery
Supplied accessories
Telephone line cord (1 )
Handset cord (1 )

Design and specifications are subject to change without notice.

**WARNING**

**To prevent fire or shock hazard, do not expose the set to rain or moisture.**
**To avoid electrical shock, do not open the cabinet.**
**Refer servicing to qualified personnel only.**

**For the customers in the U.S.A.**


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

* The graphical symbols are on the bottom enclosure.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

## ID TELEPHONE CLOCK RADIO

MICROFILM

SONY®

## TABLE OF CONTENTS


Specifications ..... 1

**1. GENERAL**
Location and Function of Controls ..... 3

**2. DISASSEMBLY**
2-1. Key Board, Cabinet (Upper) Assy Removal ..... 7
2-2. Main Board, Transformer Board, Transformer retainer Board, Battery Blind Board Removal ..... 7
2-3. Cabinet (Top) Removal ..... 8
Installation Power Cord ..... 8

**3. DIAL POINTER INSTALLATION** ..... 9

**4. TEST MODE** ..... 10

**5. ELECTRICAL ADJUSTMENTS** ..... 11

**6. DIAGRAMS**
6-1. Explanation of IC Terminals ..... 12
6-2. Block Diagram ..... 13
6-3. Printed Wiring Boards (Main Section) ..... 15
6-4. Schematic Diagram (Main Section) ..... 17
6-5. Printed Wiring Boards (Key Section) ..... 19
6-6. Schematic Diagram (Key Section) ..... 21

**7. EXPLODED VIEWS**
7-1. Base Unit Section ..... 24
7-2. Handset Section ..... 25

**8. ELECTRICAL PARTS LIST** ..... 26


## SAFETY CHECK-OUT (US model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer : Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

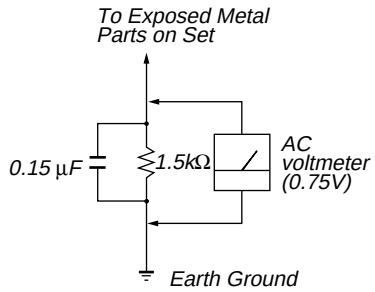


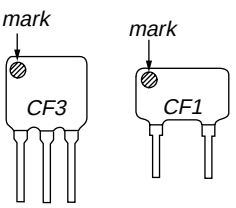

*Fig. A. Using an AC voltmeter to check AC leakage.*

**Notes on chip component replacement**

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

**• HOW TO CHANGE THE CERAMIC FILTER**

This model is used two ceramic filters of CF3 and CF1.
You must use same type of color marked ceramic filters in order to meet same specifications.
Therefore, the ceramic filter must change two pieces together since it's supply two pieces in package as a spare parts.




| Mark | Center frequency |
|---|---|
| red | 10.70MHz |
| blue | 10.67MHz |
| orange | 10.73MHz |
| black | 10.64MHz |
| white | 10.76MHz |

**SAFETY-RELATED COMPONENT WARNING!!**

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

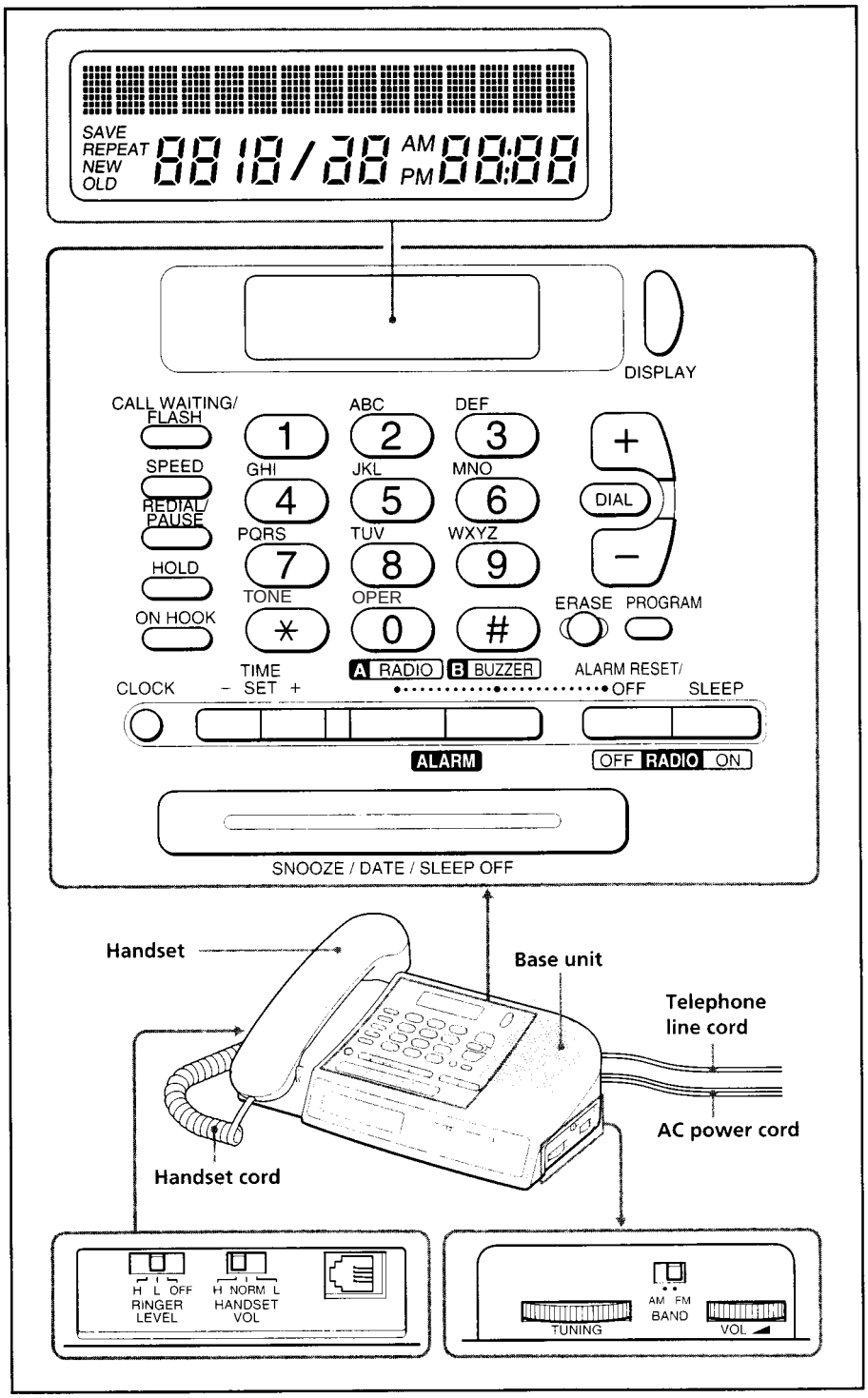
**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

**LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.**

# SECTION 1
# GENERAL

This section is extracted from instruction manual.

## LOCATION AND FUNCTION OF CONTROLS



## Installing the Battery

To keep good time, your unit needs one S-006P battery (not supplied), in addition to house current. The battery keeps the clock operating in the event of a power interruption. Before setting the time on your unit, open the lid at the bottom of the unit, install the battery with correct polarity and then close the lid.

- After a power interruption, the displayed time may not be always correct (it may gain or lose about 10 minutes per hour).

### Knowing when to replace the battery

- To check battery power, unplug the power cord from the wall outlet and plug it in again after a few minutes. If the displayed time is incorrect, replace the battery with a new one.

## Setting the Clock

### Setting the time

1 Plug in the unit.
The display will flash "AM 12:00".
2 While holding down **CLOCK**, press **TIME SET +** or **–** until the correct time appears in the display.
When you release **CLOCK**, the clock begins to operate.

- To set the current time rapidly, keep pressing the **+** or **–** button while holding down **CLOCK**.

### Setting the Date

1 While holding down **SNOOZE/DATE/SLEEP OFF**, press **TIME SET +** or **–** until the correct date appears in the display. Then, release **SNOOZE/DATE/SLEEP OFF**.

- To display the date, press **SNOOZE/DATE/SLEEP OFF**. The display returns to the current time when you release **SNOOZE/DATE/SLEEP OFF**.

## Playing the Radio

1 Press **RADIO ON/SLEEP**.
2 Select **FM** or **AM** using **BAND**.
3 Tune in a station using **TUNING**.
4 Adjust volume using **VOL**.

- To turn off the radio, press **RADIO OFF/ALARM RESET/OFF**.

If you answer a call or wish to place a call while your clock radio is playing, the radio automatically "mutes"(stops playing). (See Making Calls in detail.)

- To improve radio reception
  **FM**: Since the antenna is encased in the AC power cord, extend the cord to improve FM reception.
  **AM**: Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built into the unit.

## Setting the Alarm

To set the radio alarm, first tune in a station and adjust the volume.

1 While holding down **ALARM A RADIO** (for the radio) or **B BUZZER** (for the buzzer), press **TIME SET +** or **–** until the desired time appears in the display. When you release **ALARM A** or **B**, the **ALARM A** or **B** indicator stops flashing and lights up, and the current time appears in the display. The alarm will come on at the preset time and automatically turn itself off after 59 minutes.

- If you set **ALARM A** and **ALARM B** at the same desired time, only **ALARM A** will work.
- To shut off the alarm, press **RADIO OFF/ALARM RESET/OFF**.
  The alarm will come on at the preset time the next day.
- To cancel either alarm, while holding down the **ALARM A** or **ALARM B** button, press **RADIO OFF/ALARM RESET/OFF**.
- To adjust the radio alarm volume, turn **VOL (volume)**.
- To check the preset time, press **ALARM A** or **B**.

### To doze a few more minutes

1 Press **SNOOZE/DATE/SLEEP OFF**.
The alarm will shut off, but will come on again after about 6 minutes. You can repeat this process as many times as you like.

### To use both sleep timer and alarm function

You can fall asleep to the radio sound and you will be awakened by the radio alarm at the preset time.

1 Set the alarm. (See "Setting the Alarm")
2 Set the sleep timer. (See "Setting the Sleep Timer")

## Setting the Sleep Timer

Enjoy falling asleep to the radio using the built-in sleep timer that shuts off the radio automatically at a preset time.

1 Press **RADIO ON/SLEEP**.
The radio turns on. It will go off after the preset time has passed. You can set the sleep timer of 90, 60, 45, 30 or 15 minutes.
Every push changes the display as follows.

Current time → On → 90 → 60 → 15 → 30 → 45 →

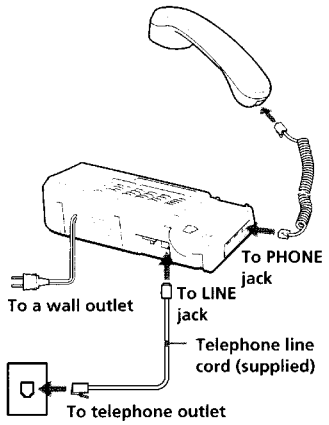
The radio will play for the time you set, then shut off.

- To turn off the radio before the preset time, press **SNOOZE/DATE/SLEEP OFF**.



## Connecting the phone

If your telephone jack is not a modular type, please contact your telephone company for assistance.




1 Use the handset cord (supplied) to connect the handset to the phone.
2 Plug one end of the telephone line cord (supplied) into the **LINE** jack, and the other end into a telephone outlet.
3 Connect the AC power cord into an AC outlet.
"AREA CODE =" appears on the display.

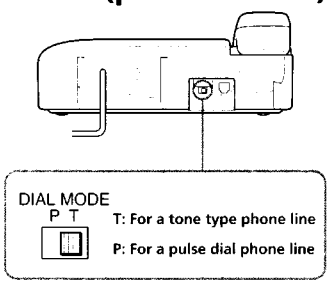
### Note

To enter your area code, see "Entering your area code".

### IMPORTANT INSTALLATION INSTRUCTION

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet location unless the jack is specifically designed for wet location.
3. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
4. Use caution when installing or modifying telephone lines.

## Selecting the DIAL MODE (pulse or tone)




If you do not know which setting is correct for your telephone line, check as follows.

1 Make a trial call with the **DIAL MODE** switch set to **T**.
2 If the call is connected, leave the switch at **T**.
Otherwise, set the switch to **P**.

## Using Touch-Tone Services with the Pulse Dialing System

Some services require you to use touch-tone. This is not a problem if your phone already uses tone dialing. If your phone uses pulse dialing, however, you need to follow the steps below to use these services.
For details on making calls, see the "Making calls" section.

1 Dial the service's number.
2 When connected to the service, press **TONE** (✱).
3 Press the dialing keys as required.
The line will remain in tone dialing until disconnected.

# Adjusting the volume

### Adjusting the ringer level

The **RINGER LEVEL** switch controls the volume of the ringer. If you do not want to be disturbed by telephone calls, you can turn the ringer off.
Set the **RINGER LEVEL** switch to **H** (High), **L** (Low), or **OFF**.

### To adjust the volume level of the handset during conversation

Normally set **HANDSET VOL** to **NORM**. If the sound is small set to **HIGH** and is too loud set to **LOW**.

# Entering your area code

When you use this unit first, or you move to an area of the country that has a different area code, you must enter your area code.
This is necessary because the phone must distinguish local or long distance calls to properly redial calls from the Caller ID list.

1 Connect the AC power cord.
For details, see the "Telephone line connection".
"AREA CODE =" appears on the display.
2 Enter three digits of your area code using the dialing keys.
You hear a confirmation beep.

### Checking the area code

Press **DIAL**.
The area code appears on the display for 20 seconds.

### To change the area code

1 Press **PROGRAM**.
2 Press **DIAL**.
3 Enter a new area code using the dialing keys.

# Making Calls

You can make a call with or without picking up the handset (the ON HOOK feature) and when your opponent answers, pick up the handset.

1 Pick up the handset or press **ON HOOK**.
"==TALK==" and talk time appear on the display.
2 Dial a phone number.
The phone number dialed appears on the display.

### Note

• If you answer a call or wish to place a call while your clock radio is playing, the radio automatically "mutes". The radio will resume playing as soon as you have disconnected your call by replacing the handset.

# Receiving Calls

1 When you hear the phone ring, pick up the handset.
The talk time appears on the display.
2 When you have finished, replace the handset in the cradle to disconnect.

# Redialing a Number

You can redial the last number called with just one touch of the **REDIAL/PAUSE** button. This lets you easily redial the same number again if the line was busy.

1 Pick up the handset or press **ON HOOK**.
"==TALK==" and the talk time appear on the display.
2 Press **REDIAL/PAUSE**.
The last sequence of digits dialed will be automatically redialed.
The digits and the talk time appear on the display.

### Note

You can redial a phone number of up to 32 digits.

### To find out the last phone number dialed

With the handset placed in the cradle, press **REDIAL/PAUSE**.
The number appears on the display.

### To erase the last phone number dialed

With the handset placed in the cradle, press **REDIAL/PAUSE** twice.
The number is erased from memory and a confirmation beep sounds.

# Putting a call on hold

The **HOLD** button allows you to temporarily suspend a phone conversation without disconnecting the call. When a call is on hold, you will not be able to hear the caller, and the caller will not be able to hear you.

1 Press **HOLD**.
You can place the handset back on the cradle.
2 To resume the conversation, pick up the handset.
If you did not place the handset back on the cradle, press **HOLD**.

### Notes

• If you pick up another phone connected to the same phone line, the hold will be automatically released and you will be able to resume conversation on that phone.
• While the call is put on hold, you cannot receive incoming calls and cannot hear the "call waiting" tone if you have this service.

# Using Call Waiting (FLASH feature)

If you subscribe to a "call waiting service", press **CALL WAITING/FLASH** to switch from one party to the other.

### Note

If you do not have this service, the line will be disconnected when **CALL WAITING/FLASH** is pressed.

# Speed Dialing

You can dial with a touch of a few keys by storing a phone number on a dialing key.

## Storing Phone Numbers

1 Press **PROGRAM**.
"== PROGRAM ==" appears on the display.
2 Press **SPEED**.
3 Press one of the dialing keys ((1) to (5)) to store a phone number on.
If the telephone number is already stored on the button, the stored number appears on the display.
4 Enter the phone number you want to store.
You can enter a number up to 16 digits, including a tone and a pause, each of which is counted as one digit.
5 Press **PROGRAM**.
You will hear a long confirmation beep, and the number is stored.

### To change a programmed number

Program a new number using the procedure above. The old number will be erased automatically.

### Notes

• Do not let more than 20 seconds elapse between any two steps of the programming procedure.
• If you enter a wrong number, press **PROGRAM** first and then go back to step **1**.

### To store a number to be dialed via Private Branch Exchange (PBX)

Before entering a phone number in Step **4**, do as follows:

1 Enter the outside line access digit (e.g., 9).
2 Press **REDIAL/PAUSE**.

## Making Call Through Speed Dialing

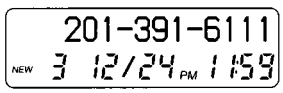
1 Pick up the handset, or press **ON HOOK**.
2 Press **SPEED**.
3 Press the desired speed dialing number ((1) to (5)). The phone number stored in the speed dialing number will be dialed.

# What is Caller ID

Caller ID allows the caller's phone number to be shown on the display before you answer the call. In order to use this feature, you must first subscribe to Caller ID service with your telephone company. The name of this service may vary depending on your telephone company.
Before using this feature, please make sure you have properly entered your area code (see "Entering the area code").

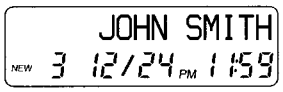
### When you receive a call

The phone number appears on the display with the day and time as shown in the following example.




**You received a call with the number 201-391-6111 at 11:59 PM on December 24th.**

If your Caller ID service includes caller name service, the caller's name appears on the display (up to 16 letters) with the day and time as shown in the following example. To switch to the phone number display, press DISPLAY.




**You received a call from John Smith at 11:59 PM on December 24th.**

When you answer the call, the lower line of the display will change to the talk time.

### Note

The day and time information is received from your telephone company. If the call came from a different time zone, it will still show the time in your area. There is no built-in clock.

## Important notes

The caller's name or phone number will not be displayed in the following cases:

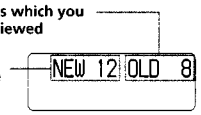
- The call is made through a telephone company which does not offer Caller ID service (including international calls). In this case, "OUT OF AREA" will be displayed.
- If the Caller ID was "blocked". For privacy reasons, many states allow callers the option to prevent his or her telephone data from being displayed on the other party's Caller ID display. If you receive a call which was "blocked" in this way, "PRIVATE" will be shown on the display.
- If the call is from an office which uses multiple lines, the phone number displayed may not match the number you use to call the extention.

## Looking at the Caller ID list

The phone stores the data of the last 20 calls received including "OUT OF AREA" and "PRIVATE" calls. It keeps track of all calls received; even if they were not answered.

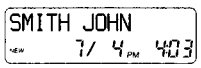
### Viewing the Caller ID list

When the phone is not in use, the display shows the following.




You can look through the data in the Caller ID list to check the number and/or name of the calls received.

**1** Press –.
The data of the newest call appears for 20 seconds.




**2** Press – to display older data or + to display newer data.

### Notes

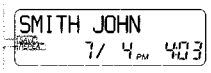
- If you have not viewed the "NEW 1" data, other "NEW" data will not be counted as the "OLD" data even after you have viewed them.
- When you have checked all the data by pressing +, 5 short beeps sound and "TOP OF LIST" appears.
- When you have checked all the data by pressing –, 5 short beeps sound and "END OF LIST" appears. If you press – again, five short error beeps will sound.

### Tip

You can view the Caller ID list during conversation also by following the steps above.

### About the "REPEAT" and "SAVE" display

"SAVE" appears if the call is "saved" (see below).




"REPEAT" appears if there are more than two calls from the same caller. The older data will be replaced by the new data, so the calls are counted as only one call (for "NEW" calls only).

### Note

If "OUT OF AREA" or "PRIVATE" calls are made for more than 2 calls, "REPEAT" will be displayed and only the new data will be replaced.

## Saving the phone numbers in the Caller ID list

As the phone keeps the data of up to 20 calls, if a 21st call comes in, the phone erases the oldest data automatically.
To prevent important data from being erased, you can "save" them. The "saved" data will not be erased until you erase them manually (see "Erasing the data from the Caller ID list").
You can save up to 10 phone numbers.

**1** Search the phone number you want to save from the Caller ID list by pressing + or –.

**2** Press **PROGRAM**.
You hear a confirmation beep and "SAVE" appears in front of the phone number.

### Note

If you try to save the 11th phone number, you hear five short error beeps and you cannot save the phone number. To save another phone number, erase one of the saved phone number (see "Erasing the data from the Caller ID list").

## Erasing the data from the Caller ID list

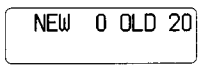
### To erase the phone number one by one

**1** First press –, and then press + or – to display the phone number you want to erase.

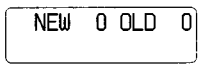
**2** Press **ERASE**.
You hear a confirmation beep and the data is erased.

### To erase the entire list at once

**1** Make sure that no data or "END OF LIST" is displayed.




**2** Press **ERASE**.
You hear a confirmation beep and the entire list is erased.




### Notes

- If you try to erase the entire list when there remains any new calls, you hear five short error beeps and you cannot erase the list.
- The "saved" numbers (see "Saving the phone numbers in the Caller ID list") are not erased even if you erase the entire list. To erase the "saved" numbers in the Caller ID list, do as described in "To erase the phone number one by one."

## Using the Caller ID list

You can easily call back a number from the Caller ID list by pressing the DIAL button.
You can also store a number from the Caller ID list into one of the the one-touch dialing buttons.

### Calling back a number from the Caller ID list

**1** First press –, and then press + or – to select the number you want to dial.

**2** Press **DIAL**.
The phone is set to the ON HOOK mode and automatically dials the number displayed.

### Note

You can also make a call by following the same procedure after you pick up the handset.

## Using Caller ID with call waiting service

In order to use the "Caller ID with call waiting" service, you need to subscribe to a telephone company which offers Caller ID service combined with "call waiting" service.
When a new call comes in, the name or the phone number of the new caller appears on the display.
Before you use this feature, make sure that you have subscribe to both Caller ID service and "call waiting" service with your telephone company and also ask the company if it offers Caller ID service combined with "call waiting" service.

When a new call comes in while you are talking, you hear two short beeps from the handset and the volume is momentarily muted. "CALL WAITING"appears on the display with a short beep from the speaker of the base unit and then the caller's name or phone number of the new call appears on the display for about 20 seconds.

**1** When you want to switch to a new call, press **CALL WAITING/FLASH**.
The current caller is put on hold and you can answer the new call.

**2** When you want to switch back to the first caller, press **CALL WAITING/FLASH** again.
Pressing **CALL WAITING/FLASH** lets you switch between the two calls.

### If you have not subscribed to "Caller ID with call waiting" service

Proceed as follows:

**1** Press **PROGRAM**.

**2** Press **CALL WAITING/FLASH** for 2 seconds.
"Caller ID with call waiting is OFF" appears on the display.
When you subscribe to this service later, set the phone ON for the service by following the same steps.

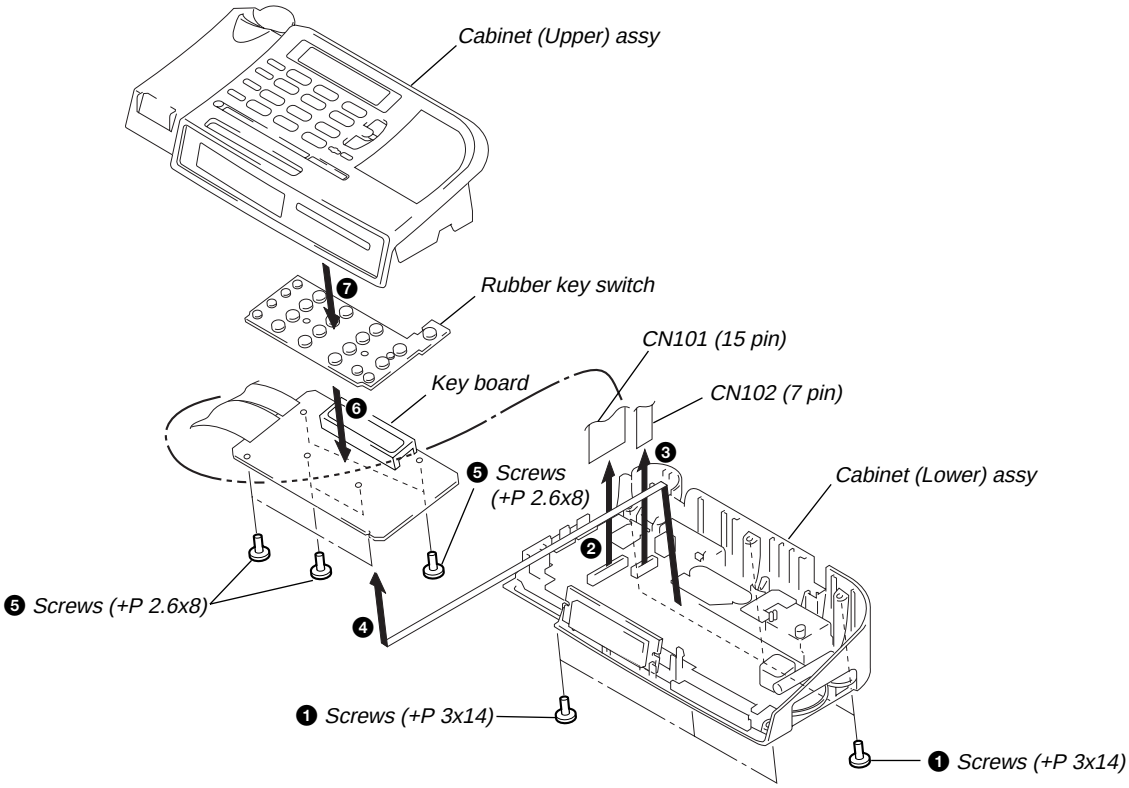
### Note

If **CALL WAITING/FLASH** is pressed when there is no new incoming call, the call will be disconnected.

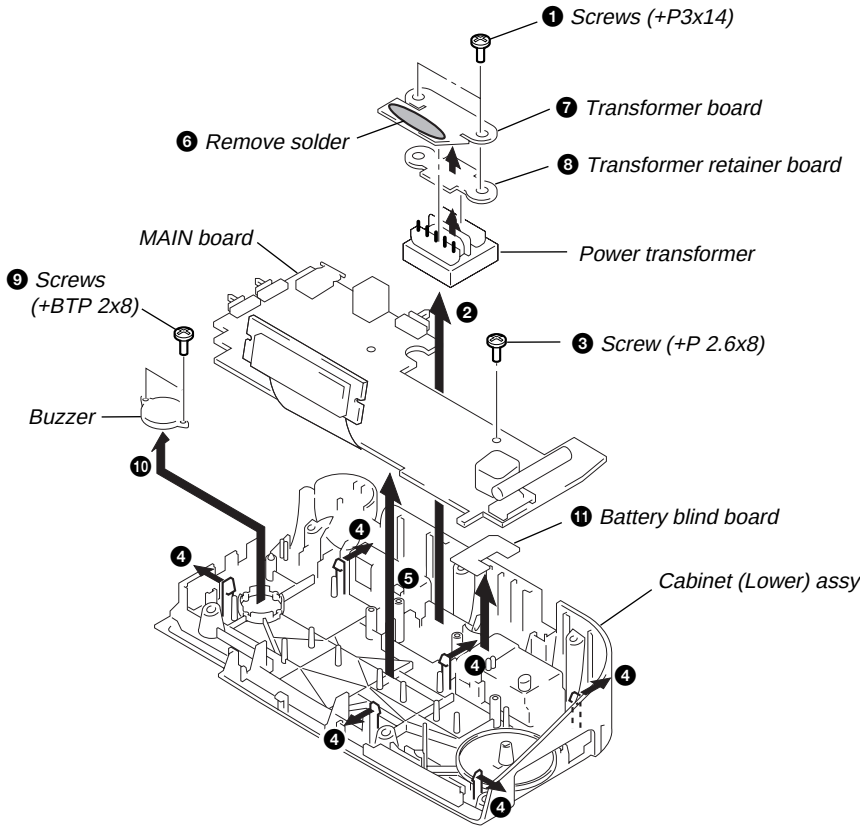
# SECTION 2
# DISASSEMBLY

**Note :** Follow the disassembly procedure in the numerical order given.

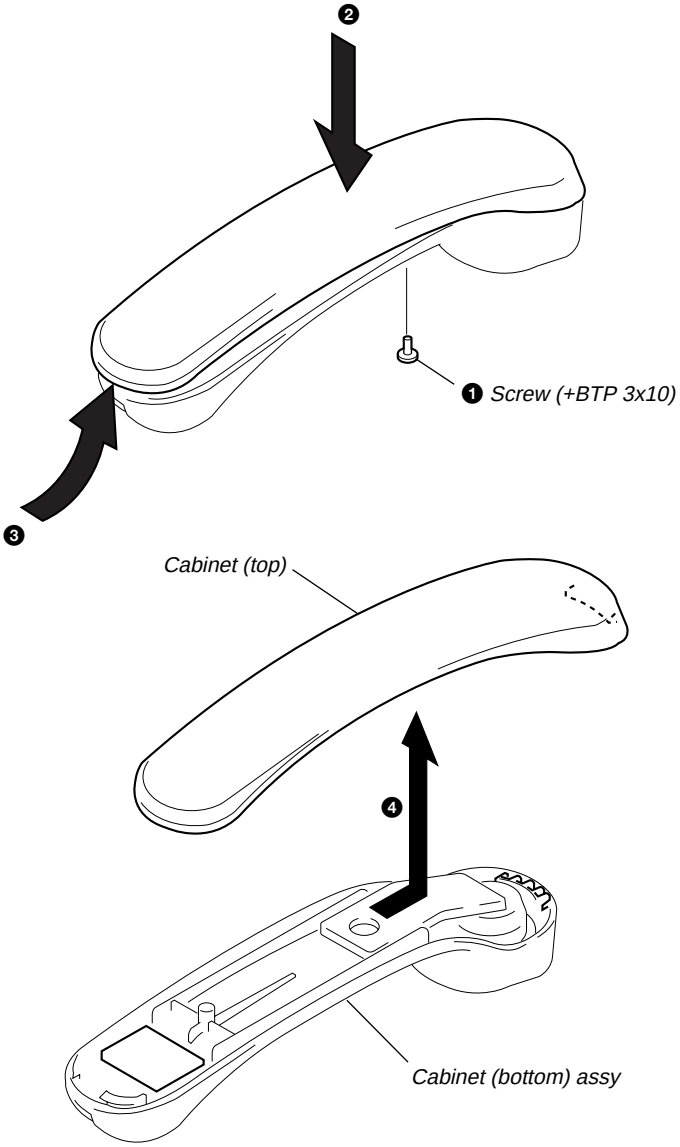
## 2-1. KEY BOARD, CABINET (UPPER) ASSY REMOVAL



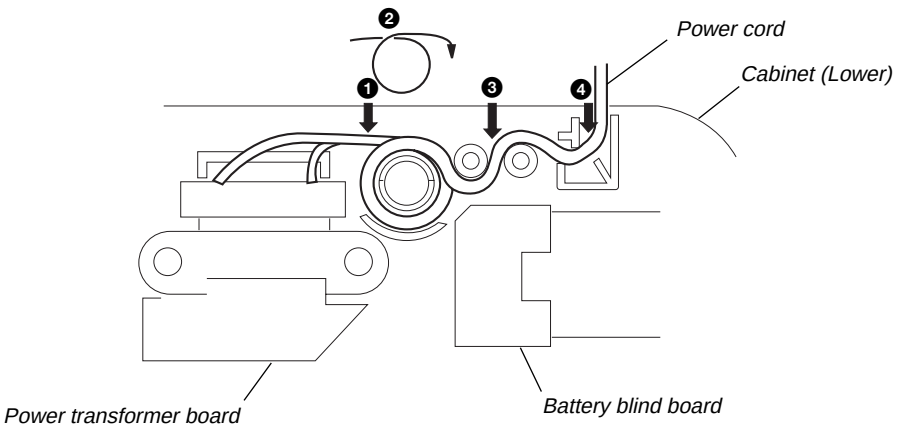

## 2-2. MAIN BOARD, TRANSFORMER BOARD, TRANSFORMER RETAINER BOARD, BATTERY BLIND BOARD REMOVAL



## 2-3. CABINET (TOP) REMOVAL

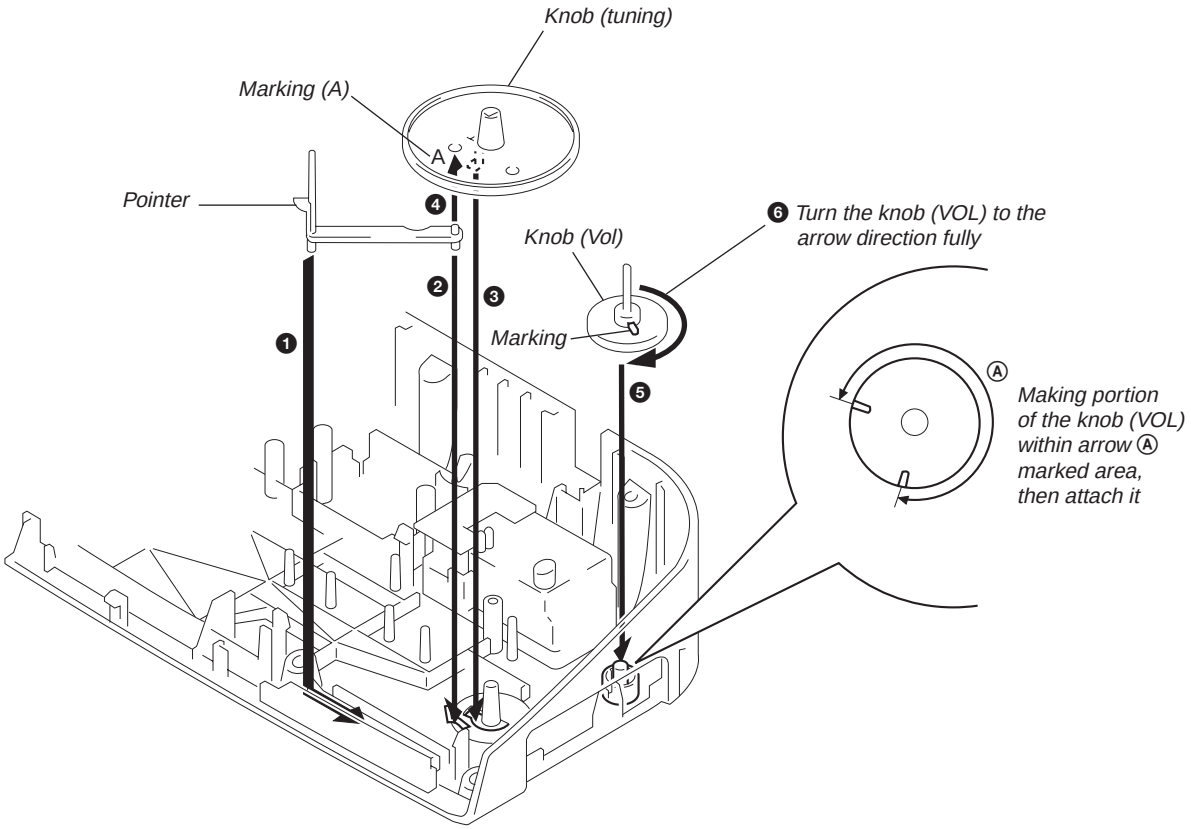


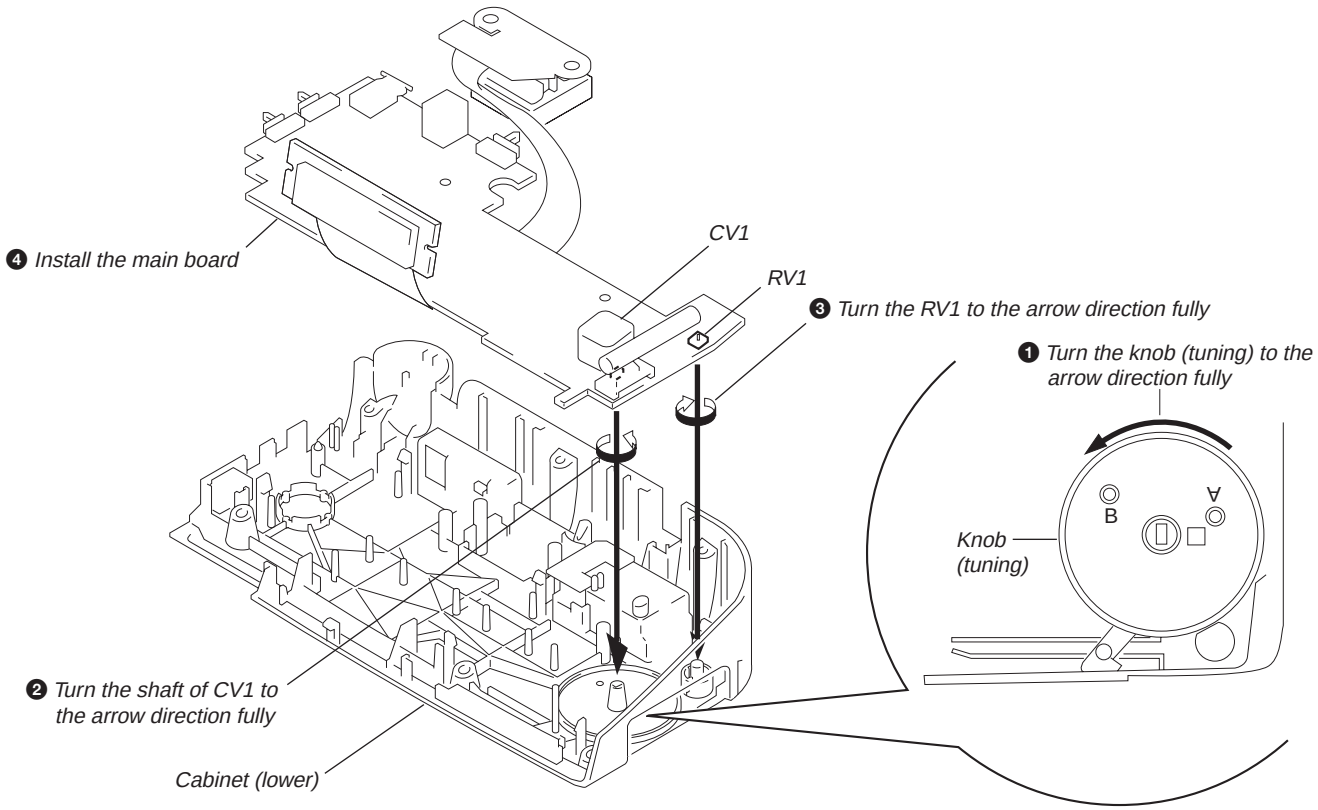

## INSTALLATION POWER CORD



# SECTION 3
# DIAL POINTER INSTALLATION

**Note :** Follow the installation procedure in the numerical order given.





4 Install the main board
CV1
RV1
3 Turn the RV1 to the arrow direction fully
1 Turn the knob (tuning) to the arrow direction fully
B
A
Knob (tuning)
2 Turn the shaft of CV1 to the arrow direction fully
Cabinet (lower)

# SECTION 4
# TEST MODE

### 1. Key Input Test
(1) Press the [PROG] , [ERASE] , [*] [0], [#] buttons simultaneously.
(2) A beep tone sounds and test mode is now set.
(3) Press the [1] button to set the test mode to key input.
(4) A beep tone sounds each time the [CALL W] [AITIN/FLASH] , [SPEED] , [REDIAL/P] [AUSE] ····· are pressed (order button is pressed does not matter). Except for the [ON HOOK] button.

### 2. EEPROM Memory Test & Erasure
(1) Press the [PROG] , [ERASE] , [*] [0], [#] buttons simultaneously.
(2) A beep tone sounds and test mode is now set.
(3) Press the [2] button to set the EEPROM test mode.
(4) A beep tone sounds, the message [EEPROM TESTING] appears and testing starts.

### 3. LCD Test
(1) Press [3] button to set LCD test mode. All LCDs light up.

### 4. Power Failure Test
(1) Press the [PROG] , [ERASE] , [*] [0], [#] buttons simultaneously.
(2) A beep tone sounds and test mode is now set.
(3) Remove the power cord from the plug socket (outlet) and plug it back in once again. The following message appears on the LCD display.

**POWER FAIL OK**

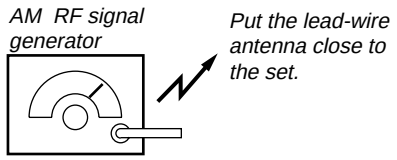
# SECTION 5
# ELECTRICAL ADJUSTMENTS

## TUNER SECTION

- RADIO switch : ON
- VOLUME : MIN

**AM Section**

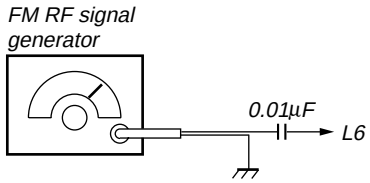
BAND : AM



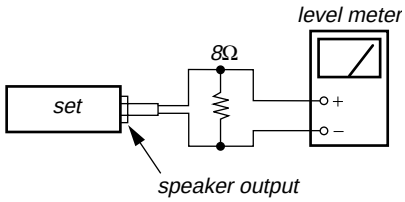

*30% amplitude modulation by 400Hz signal.*
*Output level : as low as possible*

**FM Section**

BAND : FM




*22.5kHz frequency deviation by 400Hz signal.*
*Output level : as low as possible*




- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

| AM IF ALIGNMENT | |
|---|---|
| Adjust for a maximum reading on level meter. | |
| T1 | 455kHz |

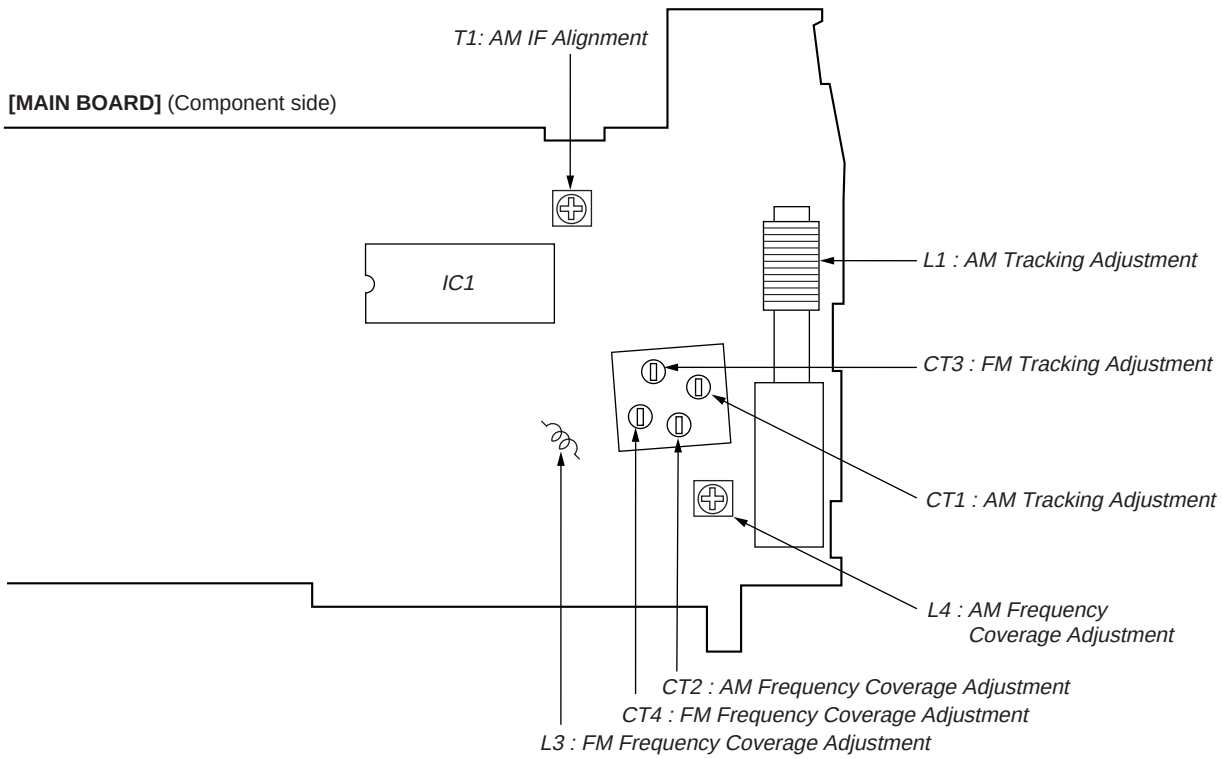
| AM FREQUENCY COVERAGE ADJUSTMENT | |
|---|---|
| Adjust for a maximum reading on level meter. | |
| L4 | 520kHz |
| CT2 | 1,650kHz |

| AM TRACKING ADJUSTMENT | |
|---|---|
| Adjust for a maximum reading on level meter. | |
| L1 | 600kHz |
| CT1 | 1,400kHz |

| FM FREQUENCY COVERAGE ADJUSTMENT | |
|---|---|
| Adjust for a maximum reading on level meter. | |
| L3 | 86.5MHz |
| CT4 | 109.5MHz |

| FM TRACKING ADJUSTMENT | |
|---|---|
| Adjust for a maximum reading on level meter. | |
| confirmation | 86.5MHz |
| CT3 | 109.5MHz |

**Adjustment Location :**


T1: AM IF Alignment
[MAIN BOARD] (Component side)
IC1
L1 : AM Tracking Adjustment
CT3 : FM Tracking Adjustment
CT1 : AM Tracking Adjustment
L4 : AM Frequency Coverage Adjustment
CT2 : AM Frequency Coverage Adjustment
CT4 : FM Frequency Coverage Adjustment
L3 : FM Frequency Coverage Adjustment

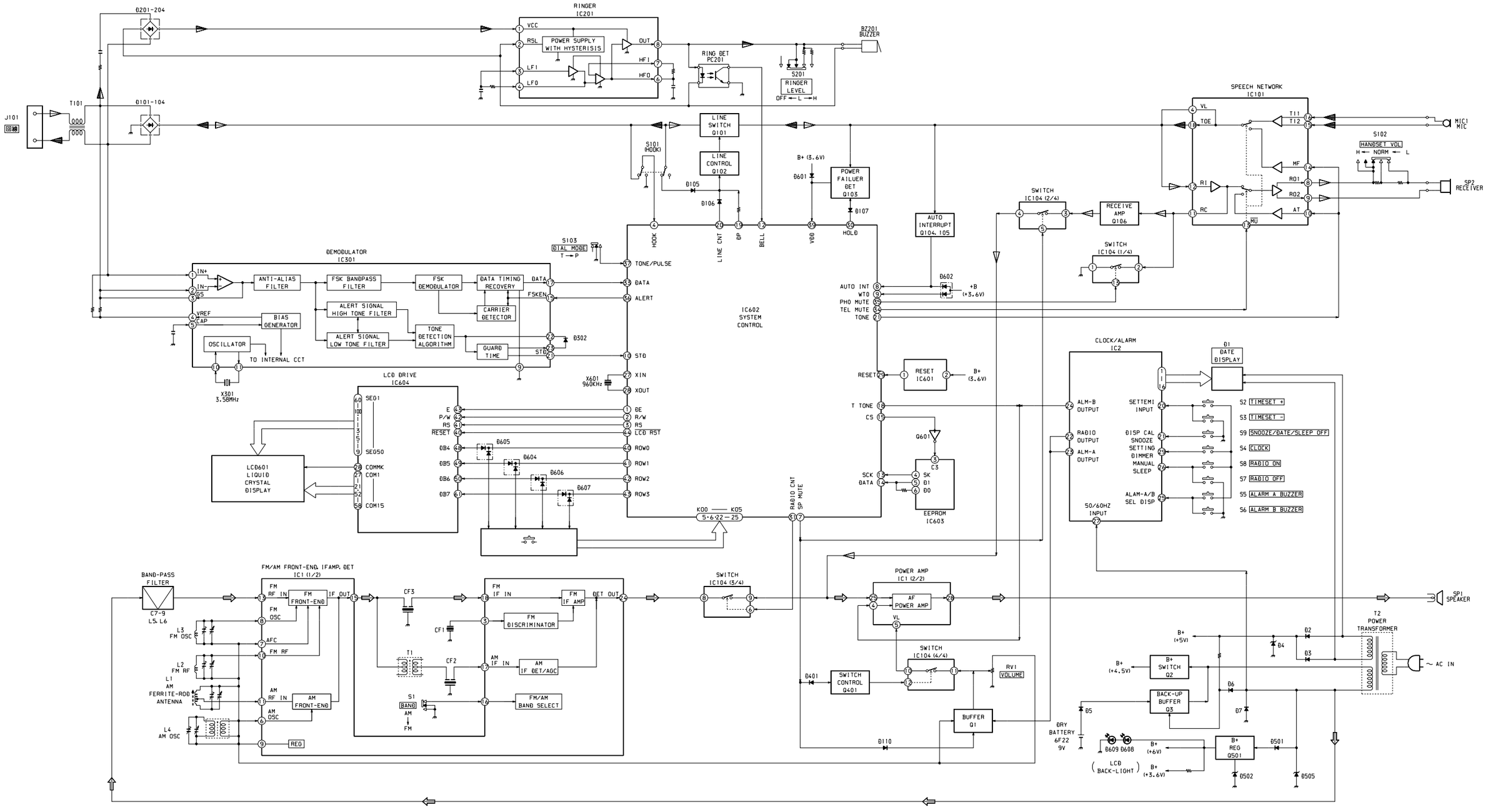
# SECTION 6
# DIAGRAMS

## 6-1. EXPLANATION OF IC TERMINALS

### IC602 TMP47C853F (SYSTEM CONTROL)

| Pin No. | Pin name | I/O | Description |
|---|---|---|---|
| 1 | DE | O | Data enable output terminal. |
| 2 | R/W | O | Read/write select signal output. 0 : Write, 1 : Read |
| 3 | RS | O | Register select signal output. |
| 4 | HOOK | I | Hook switch DET. |
| 5 | KO4 | I | Key return input. |
| 6 | KO5 | I | Key return input. |
| 7 | SP MUTE | O | Mute signal output. |
| 8 | AUTO INT | I | Auto initial DET terminal. |
| 9 | WT0 | – | Not used (“H” : Level). |
| 10 | STD | I | Dual tone alert signal delayed steering input. |
| 11 | XT IN | – | Not used (Open). |
| 12 | BELL | I | Ringer signal detect. |
| 13 | SCK | O | Serial clock output to EEPROM. |
| 14 | DATA | I/O | Serial data input/output terminal. |
| 15 | CS | O | Chip select output to EEPROM. |
| 16 | VSS | – | Ground. |
| 17 | NC | – | Not used (Open). |
| 18 | T TONE | O | Beep signal output. |
| 19 | DP | O | Dial pulse control signal output. |
| 20 | LINE CNT | O | Tel line control signal output. |
| 21 | TONE | O | DTMF signal output. |
| 22 | KO0 | I | Key return input. |
| 23 | KO1 | I | Key return input. |
| 24 | KO2 | I | Key return input. |
| 25 | KO3 | I | Key return input. |
| 26 | TEST | I | Test mode terminal. “L” : Normal |
| 27 | X IN | I | System clock oscillator (960kHz). |
| 28 | X OUT | O | System clock oscillator (960kHz). |
| 29 | RESET | I | System reset terminal. |
| 30 | HOLD | I | Power failuer DET terminal. |
| 31 | RADIO CNT | O | Radio signal output control. |
| 32 | BACK-UP | I | Back-up DET terminal. |
| 33 | DATA | I | Data input from IC301. |
| 34 | TEL MUTE | O | Mute signal output to speech network IC (IC101). |
| 35 | PH0 MUTE | O | Receiver signal mute output. |
| 36 | ALERT | O | FSK enable output. |
| 37 | TONE/PULSE | I | Tone/pulse select input terminal. |
| 38 | NC | – | Not used (Open). |
| 39 | VDD | – | Power supply (3V). |
| 40 | ROW 0 | O | Key source output. |
| 41 | ROW 1 | O | Key source output. |
| 42 | ROW 2 | O | Key source output. |
| 43 | ROW 3 | O | Key source output. |
| 44 | $\overline{\text{LCD RST}}$ | O | Reset signal output to LCD driver IC (IC604). |

## 6-2. BLOCK DIAGRAM

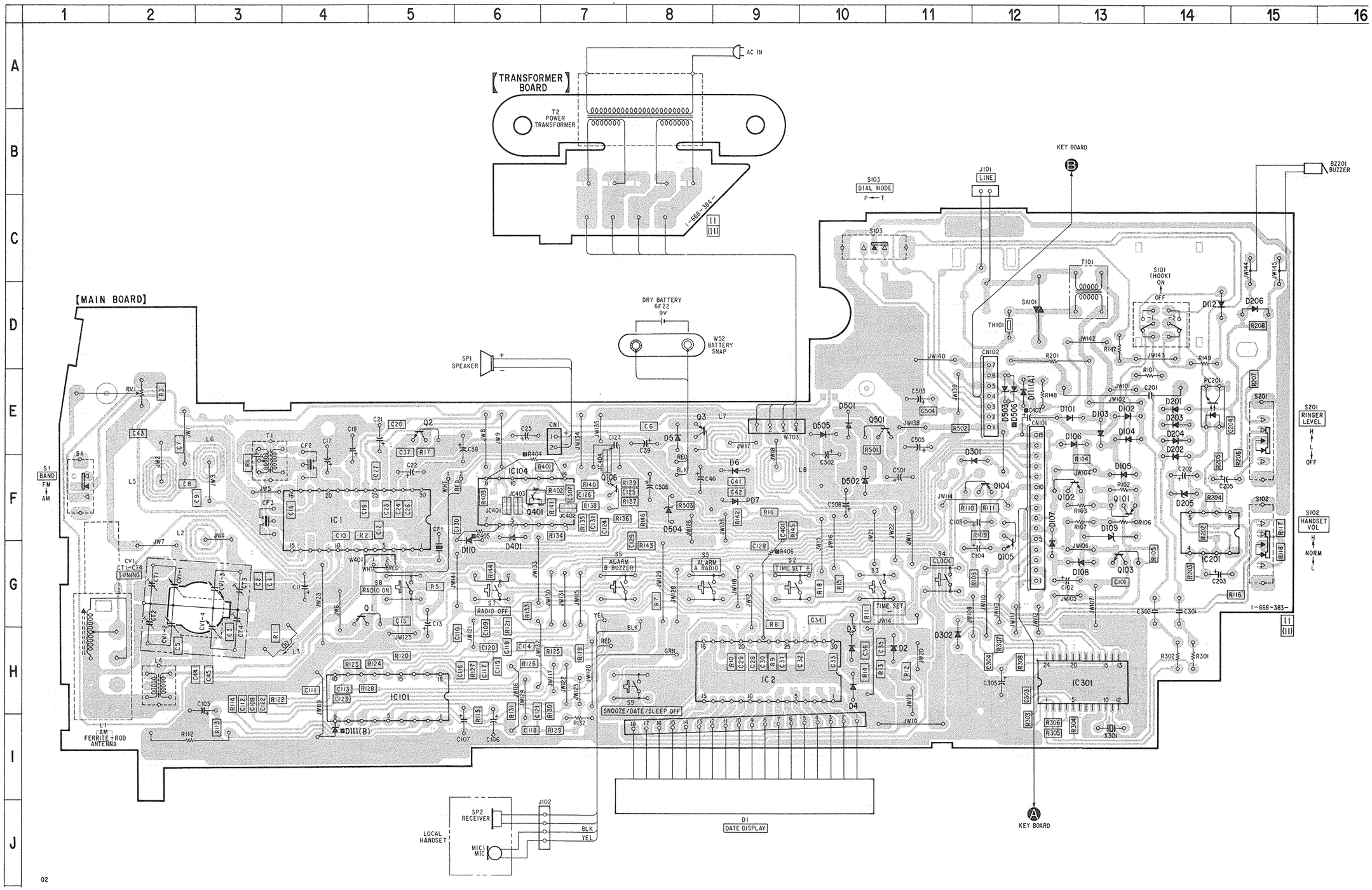



- Signal path.
  - ⇨ : FM
  - ▷ : RX (From Tel Line)
  - ▶ : TX (To Tel Line)
  - ➤ : bell

## 6-3. PRINTED WIRING BOARDS (MAIN SECTION)

- **SEMICONDUCTOR LOCATION**

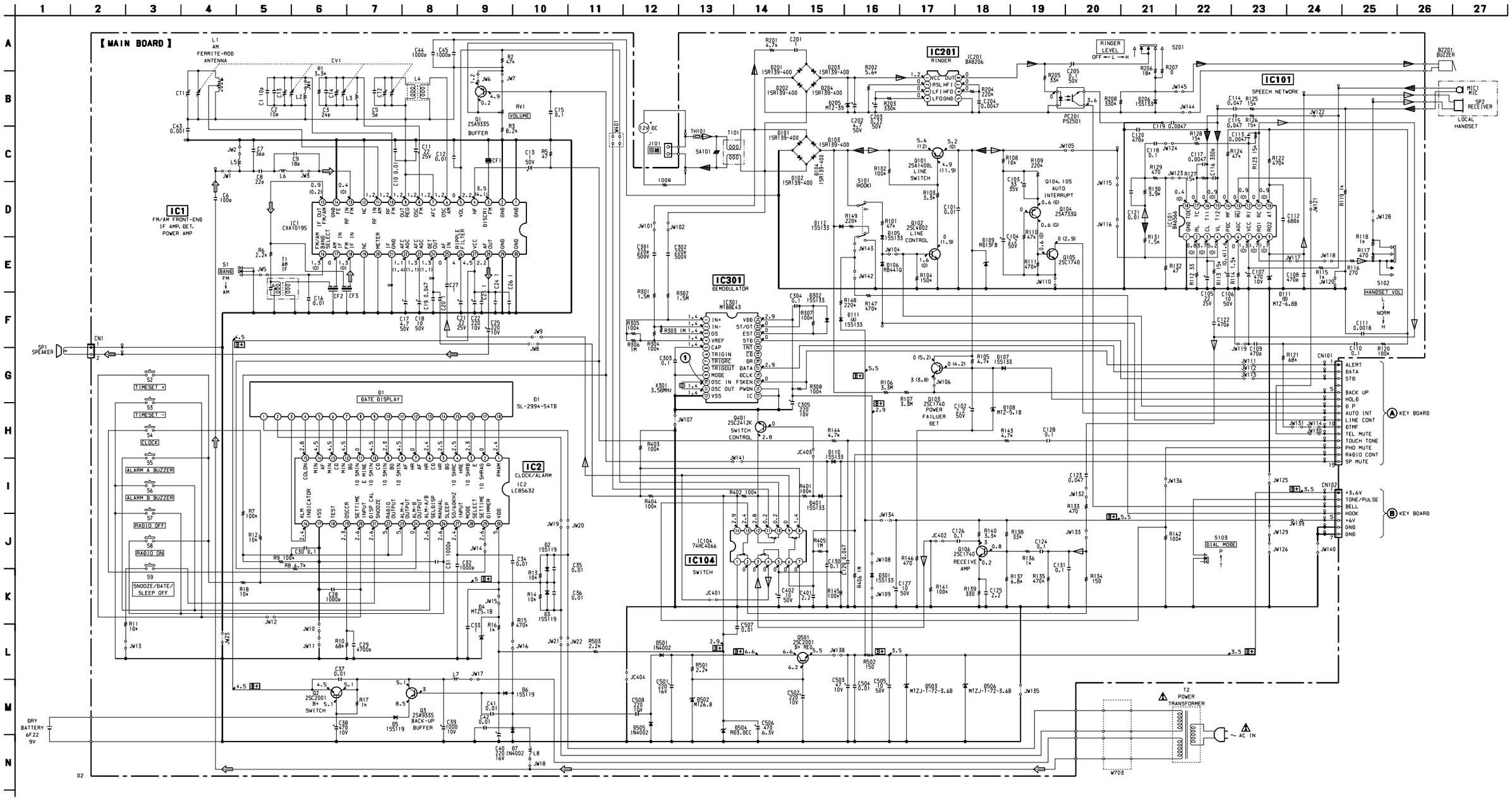
| Ref. No. | Location |
|---|---|
| D1 | I-9 |
| D2 | H-11 |
| D3 | H-10 |
| D4 | H-10 |
| D5 | E-8 |
| | |
| D6 | F-9 |
| D7 | F-9 |
| D101 | E-13 |
| D102 | E-13 |
| D103 | E-13 |
| D104 | E-13 |
| | |
| D105 | F-13 |
| D106 | E-13 |
| D107 | G-12 |
| D108 | G-13 |
| D109 | F-13 |
| | |
| D110 | F-6 |
| D111(A) | E-12 |
| D111(B) | I-4 |
| D112 | D-14 |
| D201 | E-14 |
| | |
| D202 | F-14 |
| D203 | E-14 |
| D204 | E-14 |
| D205 | F-14 |
| D206 | D-15 |
| | |
| D301 | F-11 |
| D302 | H-11 |
| D401 | F-6 |
| D501 | E-10 |
| D502 | F-10 |
| | |
| D503 | E-12 |
| D504 | F-8 |
| D505 | E-10 |
| | |
| IC1 | F-4 |
| IC2 | H-9 |
| IC101 | H-5 |
| IC104 | F-6 |
| IC201 | F-14 |
| | |
| IC301 | H-13 |
| | |
| | |
| Q1 | G-4 |
| Q2 | E-5 |
| Q3 | E-8 |
| Q101 | F-13 |
| Q102 | F-13 |
| | |
| Q103 | G-13 |
| Q104 | F-12 |
| Q105 | G-12 |
| Q106 | F-7 |
| Q401 | F-6 |
| | |
| Q501 | E-10 |




**Note:**

- ——o—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ▒▒ : Pattern on the side which is seen.

## 6-4. SCHEMATIC DIAGRAM (MAIN SECTION) ● Refer to page 23 for IC Block Diagrams.




**Note:**

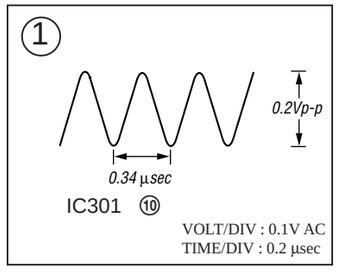
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.

| **Note:** | **Note:** |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié. |

- B + : B+ Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM (RADIO SECTION)
  TALK (TELEPHONE SECTION)
  ( ) : AM (RADIO SECTION)
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

- Signal path.
  ⇨ : FM
  ▷ : RX (From Tel Line)
  ▶ : TX (To Tel Line)
  ◥ : bell

**● WAVEFORM**

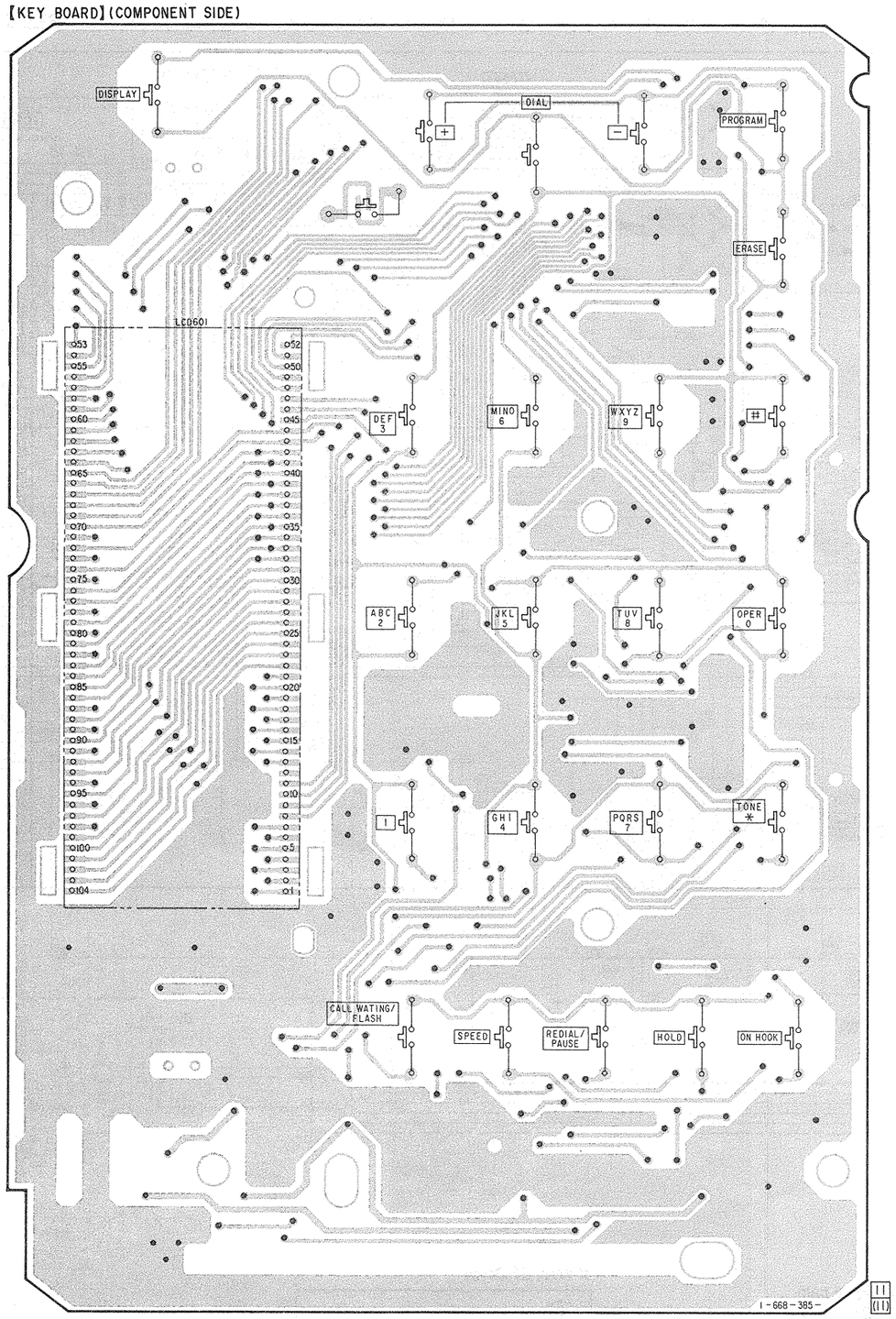


## 6-5. PRINTED WIRING BOARDS (KEY SECTION)

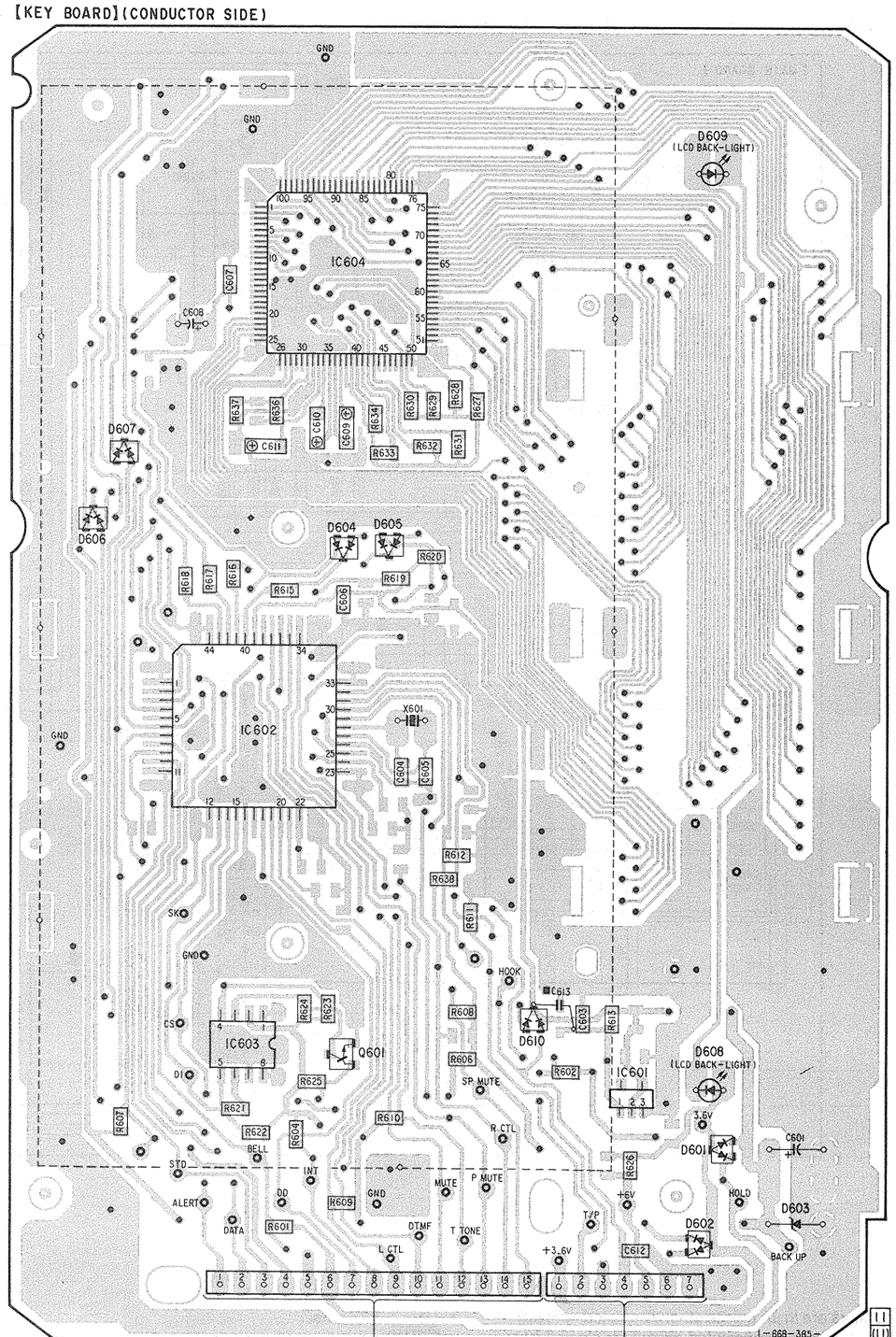
- **SEMICONDUCTOR LOCATION**

| Ref. No. | Location |
|---|---|
| D601 | I-13 |
| D602 | J-13 |
| D603 | J-14 |
| D604 | E-10 |
| D605 | E-11 |
| D606 | D-8 |
| D607 | D-9 |
| D608 | I-13 |
| D609 | B-13 |
| D610 | H-12 |
| IC601 | I-12 |
| IC602 | F-10 |
| IC603 | H-9 |
| IC604 | C-10 |
| Q601 | H-10 |

【KEY BOARD】(COMPONENT SIDE)




【KEY BOARD】(CONDUCTOR SIDE)




**Note:**

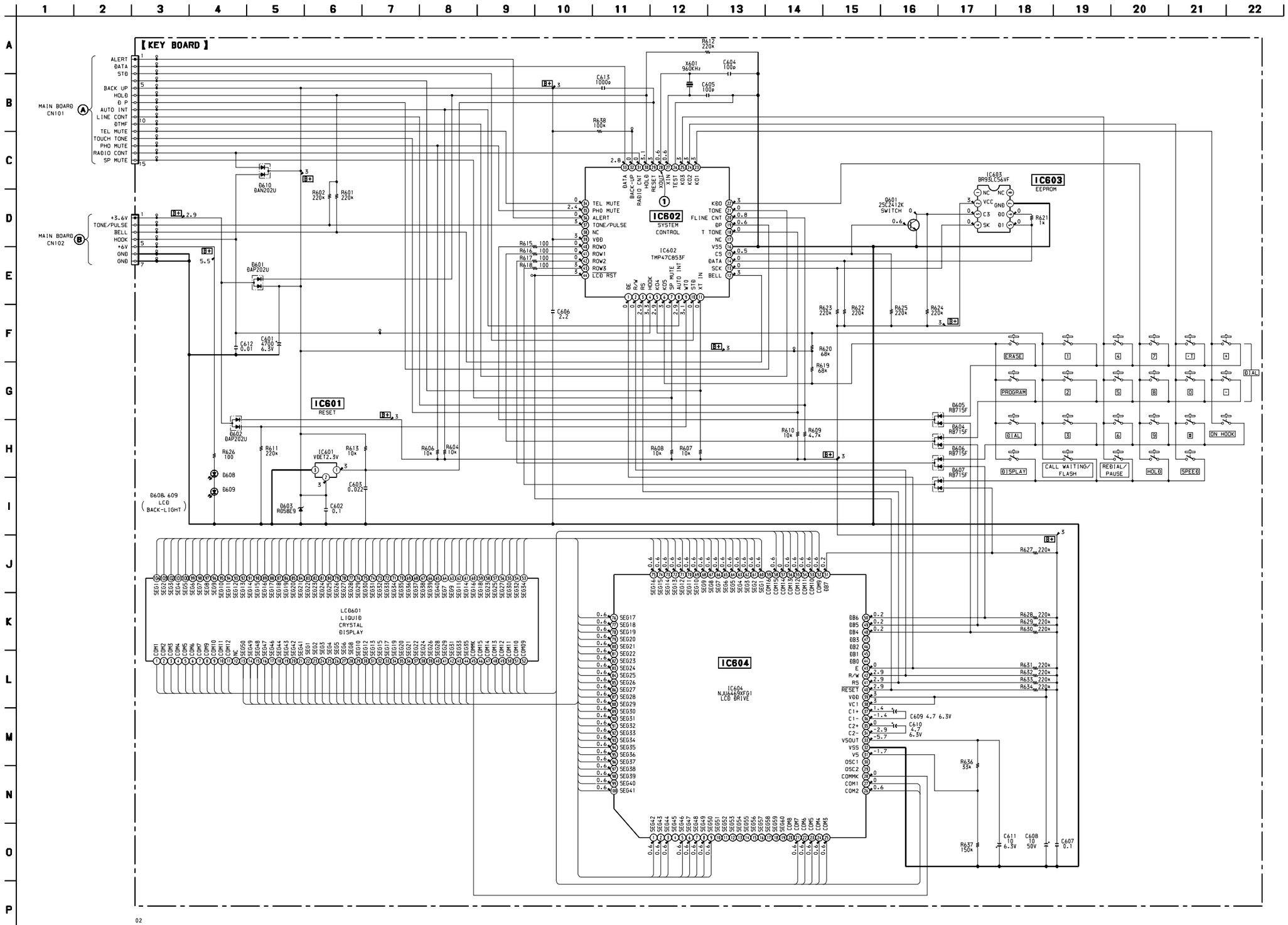
- ○——— : parts extracted from the component side.
- ▩ : parts mounted on the conductor side.
- ● : Through hole.
- ▒▒ : Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)

Caution:

| | |
|---|---|
| Pattern face side: (Conductor Side) | Parts on the pattern face side seen from the pattern face are indicated. |
| Parts face side: (Component Side) | Parts on the parts face side seen from the parts face are indicated. |

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.

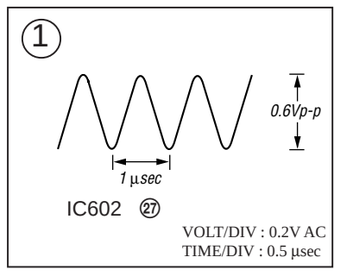
SCT-ID10 (SM)
KEY SECTION
1998.3 M




**Note:**

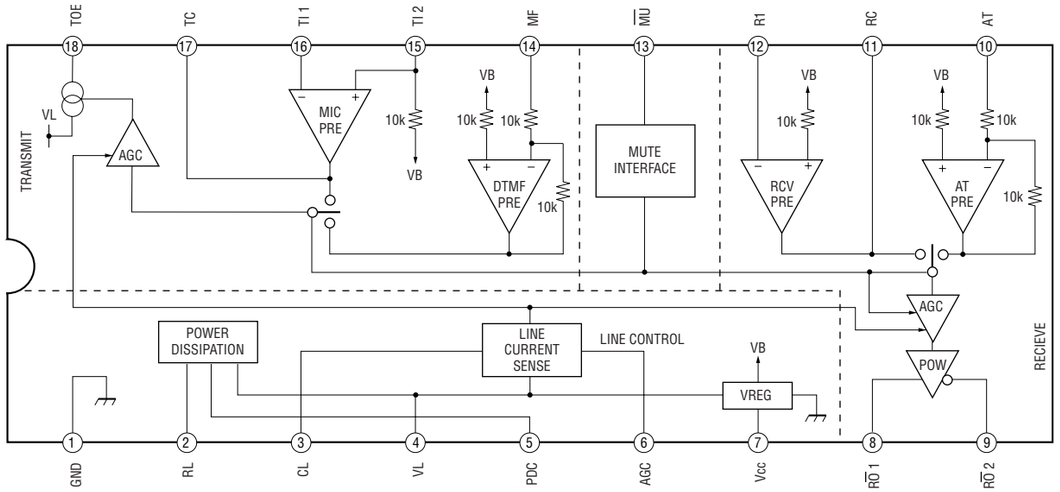
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- B + : B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM (RADIO SECTION)
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

● **WAVEFORM**



## ● IC BLOCK DIAGRAMS

### IC101 BA6566




### IC201 BA8206




### IC301 MT88E43ASR




## ● CIRCUIT BOARDS LOCATION





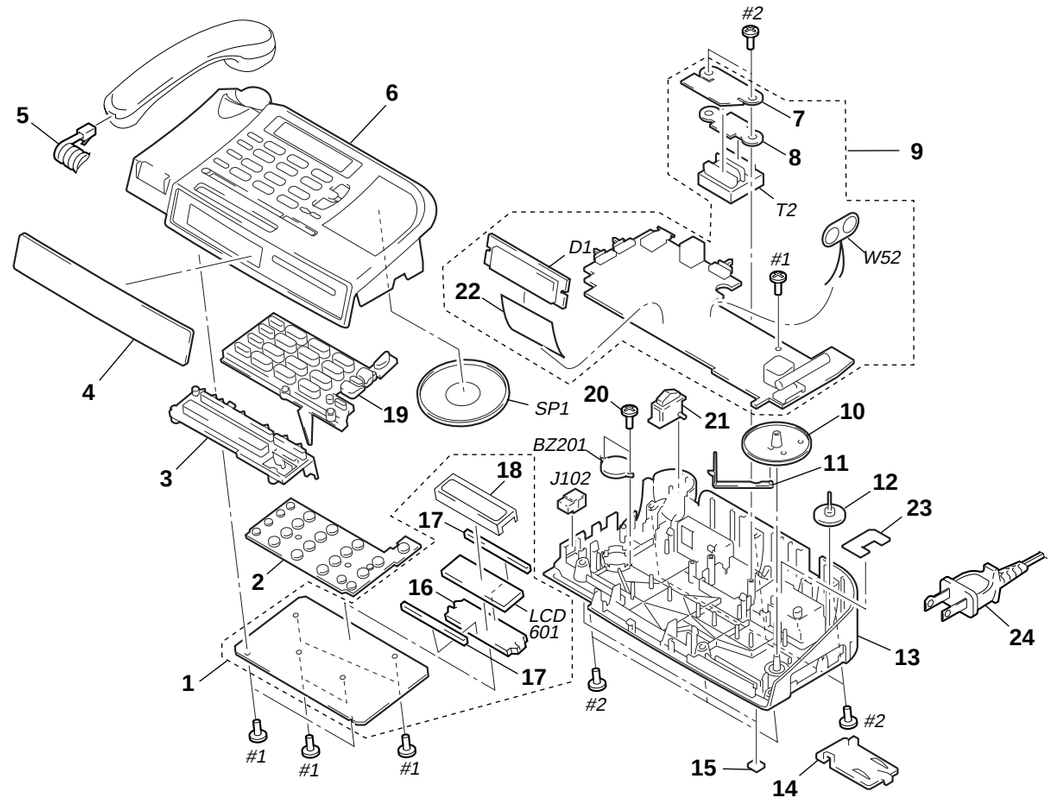

# SECTION 7
# EXPLODED VIEWS

NOTE :
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

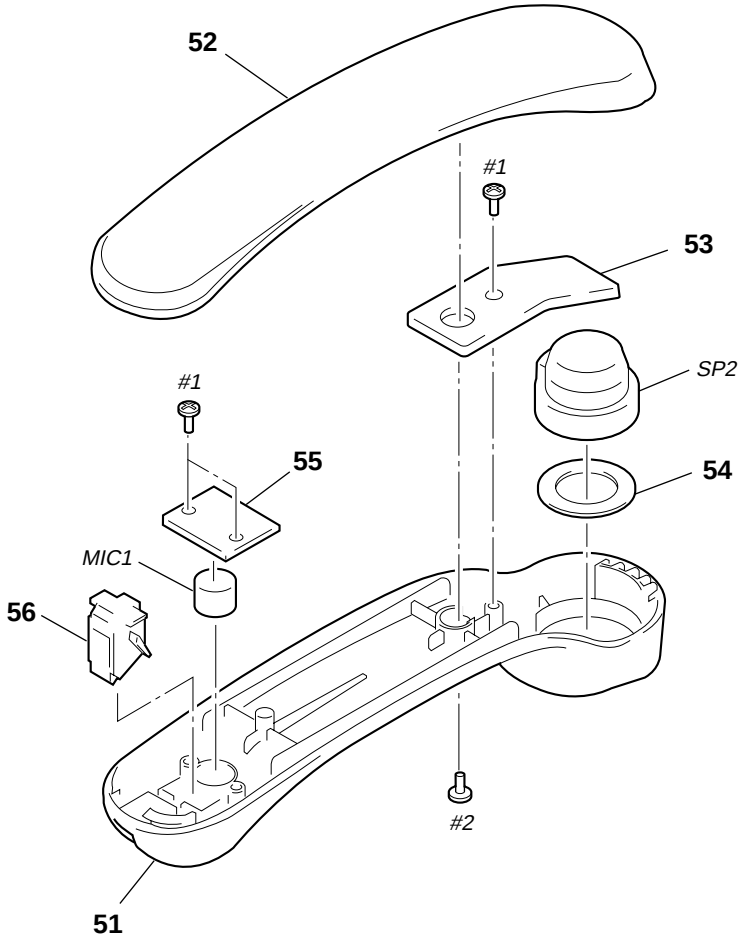
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

## 7-1. BASE UNIT SECTION




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * 1 | A-3679-977-A | KEY BOARD, COMPLETE | |
| 2 | 1-771-368-11 | SWITCH, RUBBER KEY | |
| 3 | 3-021-131-01 | BUTTON (CLOCK) | |
| 4 | 3-021-129-01 | PLATE (CLOCK), TRANSPARENT | |
| 5 | 1-696-455-71 | CORD, CURL | |
| 6 | X-3375-548-1 | CABINET (UPPER) ASSY | |
| * 7 | 1-668-384-11 | TRANSFORMER BOARD | |
| * 8 | 1-669-395-11 | TRANSFORMER RETAINER BOARD | |
| * 9 | A-3679-978-A | MAIN BOARD, COMPLETE | |
| 10 | 3-922-000-01 | KNOB (TUNING) | |
| 11 | 3-922-002-11 | POINTER | |
| 12 | 3-919-268-01 | KNOB (VOL) | |
| 13 | 3-021-128-01 | CABINET (LOWER) | |
| 14 | 3-369-135-21 | LID, BATTERY CASE | |
| 15 | 3-368-852-01 | FOOT | |
| 16 | 3-021-134-01 | HOLDER, LCD | |
| 17 | 1-694-420-11 | CONDUCTIVE BOARD, CONNECTION | |
| * 18 | 3-021-138-01 | PLATE (LCD), SHIELD | |
| 19 | 3-021-132-01 | BUTTON (TEL) | |
| 20 | 3-371-765-21 | SCREW (2X8), +BTP | |
| 21 | 3-021-133-01 | HOOK | |
| 22 | 1-777-242-11 | CORD, CONNECTION | |
| * 23 | 1-669-397-11 | BATTERY BLIND BOARD | |
| ⚠24 | 1-769-339-22 | CORD, POWER | |
| BZ201 | 1-505-978-11 | PIEZOELECTRIC BUZZER | |
| D1 | 1-810-027-11 | DIODE SL-2994-54TB (DATE DISPLAY) | |
| J102 | 1-770-504-11 | JACK, MODULAR (TO HANDSET) | |
| LCD601 | 1-803-112-11 | DISPLAY PANEL, LIQUID CRYSTAL | |
| SP1 | 1-504-748-21 | SPEAKER (6.6cm) | |
| ⚠T2 | 1-429-460-11 | TRANSFORMER, POWER | |
| W52 | 1-535-804-21 | SNAP, BATTERY | |

## 7-2. HAMDSET SECTION




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 51 | 3-021-136-01 | HAND SET (LOWER) | |
| 52 | 3-021-135-01 | HAND SET (UPPER) | |
| * 53 | 3-021-137-01 | WEIGHT | |
| 54 | 3-380-401-01 | SPACER (SPEAKER) | |
| * 55 | 1-669-396-11 | MICROPHONE RETAINER BOARD | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 56 | 1-770-505-11 | JACK,MODULAR | |
| MIC1 | 1-542-161-11 | MICROPHONE, ELECTRET CONDENSER | |
| SP2 | 1-550-648-11 | RECEIVER, DYNAMIC | |

KEY

# SECTION 8
# ELECTRICAL PARTS LIST

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| * | A-3679-977-A | KEY BOARD, COMPLETE | | | |
| | | ********** | | | |
| | 1-694-420-11 | CONDUCTIVE BOARD, CONNECTION | | | |
| | 3-021-134-01 | HOLDER, LCD | | | |
| * | 3-021-138-01 | PLATE (LCD), SHIELD | | | |
| | | < CAPACITOR > | | | |
| C601 | 1-126-918-11 | ELECT | 4700uF | 20% | 6.3V |
| C602 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C603 | 1-163-037-11 | CERAMIC CHIP | 0.022uF | 10% | 25V |
| C604 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C605 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C606 | 1-164-505-11 | CERAMIC CHIP | 2.2uF | | 16V |
| C607 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C608 | 1-126-964-11 | ELECT | 10uF | 20% | 50V |
| C609 | 1-135-181-21 | TANTALUM CHIP | 4.7uF | 20% | 6.3V |
| C610 | 1-135-181-21 | TANTALUM CHIP | 4.7uF | 20% | 6.3V |
| C611 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C612 | 1-164-232-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C613 | 1-101-001-00 | CERAMIC | 0.001uF | | 50V |
| | | < DIODE > | | | |
| D601 | 8-719-941-09 | DIODE DAP202U | | | |
| D602 | 8-719-941-09 | DIODE DAP202U | | | |
| D603 | 8-719-109-89 | DIODE RD5.6ESB2 | | | |
| D604 | 8-719-988-82 | DIODE RB715F | | | |
| D605 | 8-719-988-82 | DIODE RB715F | | | |
| D606 | 8-719-988-82 | DIODE RB715F | | | |
| D607 | 8-719-988-82 | DIODE RB715F | | | |
| D608 | 8-719-991-09 | LED SLP381F-51-A (LCD BACK-LIGHT) | | | |
| D609 | 8-719-991-09 | LED SLP381F-51-A (LCD BACK-LIGHT) | | | |
| D610 | 8-719-941-86 | DIODE DAN202U | | | |
| | | < IC > | | | |
| IC601 | 8-759-440-91 | IC S-80723SL-AL-T1 | | | |
| IC602 | 8-759-529-21 | IC TMP47C853F-K247 | | | |
| IC603 | 8-759-535-04 | IC BR93LC56F-E2 | | | |
| IC604 | 8-759-529-23 | IC NJU6469LFG1 | | | |
| | | < LIQUID CRYSTAL DISPLAY > | | | |
| LCD601 | 1-803-112-11 | DISPLAY PANEL, LIQUID CRYSTAL | | | |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < TRANSISTOR > | | | |
| Q601 | 8-729-620-06 | TRANSISTOR 2SC3052-EF | | | |
| | | < RESISTOR > | | | |
| R601 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R602 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R604 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R606 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R607 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R608 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R609 | 1-216-065-11 | RES,CHIP | 4.7K | 5% | 1/10W |
| R610 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R611 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R612 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R613 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R615 | 1-216-025-11 | RES,CHIP | 100 | 5% | 1/10W |
| R616 | 1-216-025-11 | RES,CHIP | 100 | 5% | 1/10W |
| R617 | 1-216-025-11 | RES,CHIP | 100 | 5% | 1/10W |
| R618 | 1-216-025-11 | RES,CHIP | 100 | 5% | 1/10W |
| R619 | 1-216-093-00 | METAL CHIP | 68K | 5% | 1/10W |
| R620 | 1-216-093-00 | METAL CHIP | 68K | 5% | 1/10W |
| R621 | 1-216-049-11 | RES,CHIP | 1K | 5% | 1/10W |
| R622 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R623 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R624 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R625 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R626 | 1-216-025-11 | RES,CHIP | 100 | 5% | 1/10W |
| R627 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R628 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R629 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R630 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R631 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R632 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R633 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R634 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R636 | 1-216-085-00 | METAL CHIP | 33K | 5% | 1/10W |
| R637 | 1-216-101-00 | METAL CHIP | 150K | 5% | 1/10W |
| R638 | 1-216-097-11 | METAL CHIP | 100K | 5% | 1/10W |
| | | < VIBRATOR > | | | |
| X601 | 1-567-902-11 | OSCILLATOR, CERAMIC (960kHz) | | | |

**********

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| * | A-3679-978-A | MAIN BOARD, COMPLETE | | | |
| | | ********** | | | |
| | 1-535-804-21 | SNAP, BATTERY | | | |
| | 1-769-339-22 | CORD, POWER | | | |
| | 1-777-242-11 | CORD, CONNECTION | | | |
| | | < CAPACITOR > | | | |
| C1 | 1-163-227-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C2 | 1-163-227-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C3 | 1-163-102-00 | CERAMIC CHIP | 24PF | 5% | 50V |
| C5 | 1-163-088-00 | CERAMIC CHIP | 5PF | | 50V |
| C6 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C7 | 1-163-106-00 | CERAMIC CHIP | 36PF | 5% | 50V |
| C8 | 1-163-235-11 | CERAMIC CHIP | 22PF | 5% | 50V |
| C9 | 1-163-099-00 | CERAMIC CHIP | 18PF | 5% | 50V |
| C10 | 1-164-232-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C11 | 1-128-551-11 | ELECT | 22uF | 20% | 25V |
| C12 | 1-163-031-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C13 | 1-126-160-11 | ELECT | 1uF | 20% | 50V |
| C15 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C16 | 1-163-031-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C17 | 1-126-963-11 | ELECT | 4.7uF | 20% | 50V |
| C18 | 1-126-964-11 | ELECT | 10uF | 20% | 50V |
| C19 | 1-163-809-11 | CERAMIC CHIP | 0.047uF | 10% | 25V |
| C20 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C21 | 1-128-551-11 | ELECT | 22uF | 20% | 25V |
| C22 | 1-126-934-11 | ELECT | 220uF | 20% | 10V |
| C23 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C24 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C25 | 1-126-934-11 | ELECT | 220uF | 20% | 10V |
| C26 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C27 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C28 | 1-163-009-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C29 | 1-163-017-00 | CERAMIC CHIP | 0.0047uF | 5% | 50V |
| C30 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C31 | 1-163-009-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C32 | 1-163-009-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C33 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C34 | 1-164-232-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C35 | 1-163-031-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C36 | 1-163-031-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C37 | 1-163-031-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C38 | 1-126-925-11 | ELECT | 470uF | 20% | 10V |
| C39 | 1-126-926-11 | ELECT | 1000uF | 20% | 10V |
| C40 | 1-126-934-11 | ELECT | 220uF | 20% | 16V |
| C41 | 1-163-031-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C42 | 1-163-031-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C43 | 1-163-009-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C44 | 1-163-205-00 | CERAMIC CHIP | 0.001uF | 5% | 50V |
| C45 | 1-163-205-00 | CERAMIC CHIP | 0.001uF | 5% | 50V |
| C101 | 1-164-232-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C102 | 1-126-961-11 | ELECT | 2.2uF | 20% | 50V |
| C103 | 1-126-966-11 | ELECT | 33uF | 20% | 35V |
| C104 | 1-126-961-11 | ELECT | 2.2uF | 20% | 50V |
| C105 | 1-128-551-11 | ELECT | 22uF | 20% | 25V |
| C106 | 1-126-964-11 | ELECT | 10uF | 20% | 50V |
| C107 | 1-126-925-11 | ELECT | 470uF | 20% | 10V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C108 | 1-163-005-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C109 | 1-163-005-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C110 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C111 | 1-163-012-00 | CERAMIC CHIP | 0.0018uF | 10% | 50V |
| C112 | 1-163-007-11 | CERAMIC CHIP | 680PF | 10% | 50V |
| C113 | 1-163-017-00 | CERAMIC CHIP | 0.0047uF | 5% | 50V |
| C114 | 1-163-809-11 | CERAMIC CHIP | 0.047uF | 10% | 25V |
| C115 | 1-163-809-11 | CERAMIC CHIP | 0.047uF | 10% | 25V |
| C116 | 1-163-003-11 | CERAMIC CHIP | 330PF | 10% | 50V |
| C117 | 1-163-017-00 | CERAMIC CHIP | 0.0047uF | 5% | 50V |
| C118 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C119 | 1-163-017-00 | CERAMIC CHIP | 0.0047uF | 5% | 50V |
| C120 | 1-163-005-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C121 | 1-164-232-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C122 | 1-163-005-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C123 | 1-163-035-00 | CERAMIC CHIP | 0.047uF | | 50V |
| C124 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C125 | 1-164-505-11 | CERAMIC CHIP | 2.2uF | | 16V |
| C126 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C127 | 1-126-964-11 | ELECT | 10uF | 20% | 50V |
| C128 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C129 | 1-163-035-00 | CERAMIC CHIP | 0.047uF | | 50V |
| C130 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C131 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C201 | 1-137-479-11 | FILM | 1uF | 5% | 250V |
| C202 | 1-126-963-11 | ELECT | 4.7uF | 20% | 50V |
| C203 | 1-126-957-11 | ELECT | 0.22uF | 20% | 50V |
| C204 | 1-163-017-00 | CERAMIC CHIP | 0.0047uF | 5% | 50V |
| C205 | 1-126-956-11 | ELECT | 0.1uF | 20% | 50V |
| C301 | 1-102-244-00 | CERAMIC | 220PF | 10% | 500V |
| C302 | 1-102-244-00 | CERAMIC | 220PF | 10% | 500V |
| C303 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C304 | 1-163-038-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C305 | 1-126-934-11 | ELECT | 220uF | 20% | 10V |
| C401 | 1-164-505-11 | CERAMIC CHIP | 2.2uF | | 16V |
| C402 | 1-126-964-11 | ELECT | 10uF | 20% | 50V |
| C501 | 1-126-934-11 | ELECT | 220uF | 20% | 16V |
| C502 | 1-126-934-11 | ELECT | 220uF | 20% | 16V |
| C503 | 1-126-967-11 | ELECT | 47uF | 20% | 10V |
| C504 | 1-163-031-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C505 | 1-126-964-11 | ELECT | 10uF | 20% | 50V |
| C506 | 1-126-925-11 | ELECT | 470uF | 20% | 10V |
| C507 | 1-163-031-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C508 | 1-126-934-11 | ELECT | 220uF | 20% | 16V |
| | | < FILTER > | | | |
| CF1 | 1-579-632-51 | FILTER, CERAMIC | | | |
| CF2 | 1-577-072-11 | FILTER, CERAMIC | | | |
| CF3 | 1-579-632-51 | FILTER, CERAMIC | | | |
| | | < CONNECTOR > | | | |
| * CN1 | 1-691-573-11 | PIN, CONNECTOR (PC BOARD) 2P | | | |
| CN101 | 1-573-209-11 | SOCKET, CONNECTOR 15P | | | |
| * CN102 | 1-568-273-11 | SOCKET, CONNECTOR 7P | | | |
| | | < TRIMMER > | | | |
| CT1 | 1-151-673-11 | CAP, VARIABLE (TUNING) | | | |

## MAIN

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| CT2 | 1-151-673-11 | CAP, VARIABLE (TUNING) | |
| CT3 | 1-151-673-11 | CAP, VARIABLE (TUNING) | |
| CT4 | 1-151-673-11 | CAP, VARIABLE (TUNING) | |
| | | < VARIABLE CAPACITOR > | |
| CV1 | 1-151-673-11 | CAP, VARIABLE (TUNING) | |
| | | < DIODE > | |
| D1 | 1-810-027-11 | DIODE SL-2994-54TB | |
| D2 | 8-719-911-19 | DIODE 1SS119 | |
| D3 | 8-719-911-19 | DIODE 1SS119 | |
| D4 | 8-719-109-85 | DIODE RD5.1ES-B2 | |
| D5 | 8-719-911-19 | DIODE 1SS119 | |
| D6 | 8-719-911-19 | DIODE 1SS119 | |
| D7 | 8-719-052-88 | DIODE 1N4002 | |
| D101 | 8-719-970-02 | DIODE 1SR139-400 | |
| D102 | 8-719-970-02 | DIODE 1SR139-400 | |
| D103 | 8-719-970-02 | DIODE 1SR139-400 | |
| D104 | 8-719-970-02 | DIODE 1SR139-400 | |
| D105 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D106 | 8-719-050-84 | DIODE RB441Q-40T-77 | |
| D107 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D108 | 8-719-109-85 | DIODE RD5.1ES-B2 | |
| D109 | 8-719-160-59 | DIODE RD13F-B2 | |
| D110 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D111(A) | 8-719-991-33 | DIODE 1SS133T-77 | |
| D111(B) | 8-719-109-97 | DIODE RD6.8ES-B2 | |
| D112 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D201 | 8-719-970-02 | DIODE 1SR139-400 | |
| D202 | 8-719-970-02 | DIODE 1SR139-400 | |
| D203 | 8-719-970-02 | DIODE 1SR139-400 | |
| D204 | 8-719-970-02 | DIODE 1SR139-400 | |
| D205 | 8-719-983-97 | DIODE MTZJ-T-72-39B | |
| D206 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D301 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D302 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D401 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D501 | 8-719-052-88 | DIODE 1N4002 | |
| D502 | 8-719-109-97 | DIODE RD6.8ES-B2 | |
| D503 | 8-719-983-66 | DIODE MTZJ-T-72-3.6B | |
| D504 | 8-719-109-63 | DIODE RD3.0ESB2 | |
| D505 | 8-719-052-88 | DIODE 1N4002 | |
| D506 | 8-719-983-66 | DIODE MTZJ-T-72-3.6B | |
| | | < FILTER > | |
| T101 | 1-424-024-11 | FILTER, NOISE | |
| | | < IC > | |
| IC1 | 8-752-037-02 | IC CXA1019S | |
| IC2 | 8-759-193-05 | IC LC85632 | |
| IC101 | 8-759-979-34 | IC BA6566 | |
| IC104 | 8-759-921-81 | IC SN74HC4066N | |
| IC201 | 8-759-081-73 | IC BA8206 | |
| IC301 | 8-759-529-22 | IC MT88E43ASR | |
| | | < JACK > | |
| J101 | 1-770-503-11 | JACK, MODULAR (2C) 6P (LINE) | |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < JUMPER RESISTOR > | | | |
| JC401 | 1-216-295-00 | METAL CHIP | 0 | 5% | 1/10W |
| JC402 | 1-216-295-00 | METAL CHIP | 0 | 5% | 1/10W |
| JC403 | 1-216-295-00 | METAL CHIP | 0 | 5% | 1/10W |
| JC404 | 1-216-296-00 | METAL CHIP | 0 | 5% | 1/8W |
| | | < COIL > | | | |
| L1 | 1-402-472-31 | ANTENNA, FERRITE-ROD (MW) | | | |
| L3 | 1-428-229-11 | COIL, AIR-CORE | | | |
| L4 | 1-406-028-00 | COIL, OSC (MW) | | | |
| | | < PHOTO COUPLER > | | | |
| PC201 | 8-719-156-73 | PHOTO COUPLER PS2501-1-L | | | |
| | | < TRANSISTOR > | | | |
| Q1 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | | | |
| Q2 | 8-729-011-92 | TRANSISTOR 2SC2001TP-K1K2 | | | |
| Q3 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | | | |
| Q101 | 8-729-116-91 | TRANSISTOR 2SA1400-K | | | |
| Q102 | 8-729-025-52 | TRANSISTOR 2SC4002E-AA | | | |
| Q103 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | | | |
| Q104 | 8-729-173-38 | TRANSISTOR 2SA733-K | | | |
| Q105 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | | | |
| Q106 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | | | |
| Q401 | 8-729-620-06 | TRANSISTOR 2SC3052-EF | | | |
| Q501 | 8-729-011-92 | TRANSISTOR 2SC2001TP-K1K2 | | | |
| | | < RESISTOR > | | | |
| R1 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R2 | 1-216-089-11 | RES,CHIP | 47K | 5% | 1/10W |
| R3 | 1-216-071-11 | RES,CHIP | 8.2K | 5% | 1/10W |
| R5 | 1-216-017-11 | RES,CHIP | 47 | 5% | 1/10W |
| R6 | 1-216-057-00 | METAL CHIP | 2.2K | 5% | 1/10W |
| R7 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R8 | 1-216-065-11 | RES,CHIP | 4.7K | 5% | 1/10W |
| R9 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R10 | 1-216-093-00 | METAL CHIP | 68K | 5% | 1/10W |
| R11 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R12 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R13 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R14 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R15 | 1-216-113-00 | METAL CHIP | 470K | 5% | 1/10W |
| R16 | 1-216-049-11 | RES,CHIP | 1K | 5% | 1/10W |
| R17 | 1-216-049-11 | RES,CHIP | 1K | 5% | 1/10W |
| R18 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R101 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W |
| R102 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R103 | 1-247-843-11 | CARBON | 3.3K | 5% | 1/4W |
| R104 | 1-216-101-00 | METAL CHIP | 150K | 5% | 1/10W |
| R105 | 1-216-065-11 | RES,CHIP | 4.7K | 5% | 1/10W |
| R106 | 1-259-882-11 | CARBON | 3.3M | 5% | 1/4W |
| R107 | 1-259-882-11 | CARBON | 3.3M | 5% | 1/4W |
| R108 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R109 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R110 | 1-216-089-11 | RES,CHIP | 47K | 5% | 1/10W |
| R111 | 1-216-113-00 | METAL CHIP | 470K | 5% | 1/10W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R112 | 1-247-733-11 | CARBON | 33 | 5% | 1/2W F |
| R113 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R114 | 1-216-053-00 | METAL CHIP | 1.5K | 5% | 1/10W |
| R115 | 1-216-049-11 | RES,CHIP | 1K | 5% | 1/10W |
| R116 | 1-216-035-00 | METAL CHIP | 270 | 5% | 1/10W |
| R117 | 1-216-041-00 | METAL CHIP | 470 | 5% | 1/10W |
| R118 | 1-216-049-11 | RES,CHIP | 1K | 5% | 1/10W |
| R119 | 1-216-049-11 | RES,CHIP | 1K | 5% | 1/10W |
| R120 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R121 | 1-216-093-11 | RES,CHIP | 68K | 5% | 1/10W |
| R122 | 1-216-113-00 | METAL CHIP | 470K | 5% | 1/10W |
| R123 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R124 | 1-216-089-11 | RES,CHIP | 47K | 5% | 1/10W |
| R125 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R126 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R127 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R128 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R129 | 1-216-041-00 | METAL CHIP | 470 | 5% | 1/10W |
| R130 | 1-216-063-11 | RES,CHIP | 3.9K | 5% | 1/10W |
| R131 | 1-216-053-00 | METAL CHIP | 1.5K | 5% | 1/10W |
| R132 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W |
| R133 | 1-216-041-00 | METAL CHIP | 470 | 5% | 1/10W |
| R134 | 1-216-029-00 | METAL CHIP | 150 | 5% | 1/10W |
| R135 | 1-216-113-00 | METAL CHIP | 470K | 5% | 1/10W |
| R136 | 1-216-049-11 | RES,CHIP | 1K | 5% | 1/10W |
| R137 | 1-216-069-00 | METAL CHIP | 6.8K | 5% | 1/10W |
| R138 | 1-216-085-00 | METAL CHIP | 33K | 5% | 1/10W |
| R139 | 1-216-037-00 | METAL CHIP | 330 | 5% | 1/10W |
| R140 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R141 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R142 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R143 | 1-216-065-11 | RES,CHIP | 4.7K | 5% | 1/10W |
| R144 | 1-216-065-11 | RES,CHIP | 4.7K | 5% | 1/10W |
| R145 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R146 | 1-216-041-00 | METAL CHIP | 470 | 5% | 1/10W |
| R147 | 1-247-895-00 | CARBON | 470K | 5% | 1/4W |
| R148 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W |
| R149 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W |
| R201 | 1-247-760-11 | CARBON | 4.7K | 5% | 1/2W |
| R202 | 1-216-067-00 | METAL CHIP | 5.6K | 5% | 1/10W |
| R203 | 1-216-109-00 | METAL CHIP | 330K | 5% | 1/10W |
| R204 | 1-216-105-11 | RES,CHIP | 220K | 5% | 1/10W |
| R205 | 1-216-085-00 | METAL CHIP | 33K | 5% | 1/10W |
| R206 | 1-216-079-00 | METAL CHIP | 18K | 5% | 1/10W |
| R207 | 1-216-295-11 | SHORT | 0 | | |
| R208 | 1-216-109-00 | METAL CHIP | 330K | 5% | 1/10W |
| R301 | 1-259-878-11 | CARBON | 1.5M | 5% | 1/4W |
| R302 | 1-259-878-11 | CARBON | 1.5M | 5% | 1/4W |
| R303 | 1-216-121-11 | RES,CHIP | 1M | 5% | 1/10W |
| R304 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R305 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R306 | 1-216-121-11 | RES,CHIP | 1M | 5% | 1/10W |
| R307 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R308 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W |
| R401 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R402 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R403 | 1-216-097-11 | RES,CHIP | 100K | 5% | 1/10W |
| R404 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R405 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W |
| R406 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W |
| R501 | 1-216-057-00 | METAL CHIP | 2.2K | 5% | 1/10W |
| R502 | 1-216-025-11 | RES,CHIP | 100 | 5% | 1/10W |
| R503 | 1-216-057-00 | METAL CHIP | 2.2K | 5% | 1/10W |
| | | < VARIABLE RESISTOR > | | | |
| RV1 | 1-228-790-00 | RES, VAR, CARBON 50K (VOL Σ) | | | |
| | | < SWITCH > | | | |
| S1 | 1-762-231-11 | SWITCH, SLIDE (BAND) | | | |
| S2 | 1-554-303-21 | SWITCH, TACTILE (TIME SET +) | | | |
| S3 | 1-554-303-21 | SWITCH, TACTILE (TIME SET -) | | | |
| S4 | 1-554-303-21 | SWITCH, TACTILE (CLOCK) | | | |
| S5 | 1-554-303-21 | SWITCH, TACTILE (ALARM A RADIO) | | | |
| S6 | 1-554-303-21 | SWITCH, TACTILE (ALARM B BUZZER) | | | |
| S7 | 1-554-303-21 | SWITCH, TACTILE (RADIO OFF) | | | |
| S8 | 1-554-303-21 | SWITCH, TACTILE (RADIO ON) | | | |
| S9 | 1-554-303-21 | SWITCH, TACTILE (SNOOZE/DATE/SLEEP OFF) | | | |
| S101 | 1-692-494-11 | SWITCH, HOOK (HOOK) | | | |
| S102 | 1-692-207-21 | SWITCH, SLIDE (HANDSET VOL) | | | |
| S103 | 1-572-903-21 | SWITCH, SLIDE (DIAL MODE) | | | |
| S201 | 1-692-207-21 | SWITCH, SLIDE (RINGER LEVEL) | | | |
| | | < SPARK GAP > | | | |
| SA101 | 1-517-224-21 | GAP, DISCHARGE | | | |
| | | < TRANSFORMER > | | | |
| T1 | 1-404-790-11 | TRANSFORMER, IF | | | |
| | | < THERMISTOR > | | | |
| TH101 | 1-810-663-21 | THERMISTOR, POSITIVE | | | |
| | | < VIBRATOR > | | | |
| X301 | 1-577-292-11 | VIBRATOR, CRYSTAL (3.579545MHz) | | | |
| ********** | | | | | |
| * | 1-668-384-11 | TRANSFORMER BOARD | | | |
| | | ********** | | | |
| | | < TRANSFORMER > | | | |
| T2 | 1-429-460-11 | TRANSFORMER, POWER | | | |
| ********** | | | | | |
| * | 1-669-395-11 | TRANSFORMER RETAINER BOARD | | | |
| | | ********** | | | |
| ********** | | | | | |
| | | MISCELLANEOUS | | | |
| | | ********** | | | |
| 2 | 1-771-368-11 | SWITCH, RUBBER KEY | | | |
| 5 | 1-696-455-71 | CORD, CURL | | | |
| 17 | 1-694-420-11 | CONDUCTIVE BOARD, CONNECTION | | | |
| 22 | 1-777-242-11 | CORD, CONNECTION | | | |
| ⚠24 | 1-769-339-22 | CORD, POWER | | | |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| BZ201 | 1-505-978-11 | PIEZOELECTRIC BUZZER | |
| D1 | 1-810-027-11 | DIODE SL-2994-54TB (DATE DISPLAY) | |
| J102 | 1-770-504-11 | JACK, MODULAR (TO HANDSET) | |
| LCD601 | 1-803-112-11 | DISPLAY PANEL, LIQUID CRYSTAL | |
| MIC1 | 1-542-161-11 | MICROPHONE, ELECTRET CONDENSER | |
| SP1 | 1-504-748-21 | SPEAKER (6.6cm) | |
| SP2 | 1-550-648-11 | RECEIVER, DYNAMIC | |
| ⚠T2 | 1-429-460-11 | TRANSFORMER, POWER | |
| T101 | 1-424-024-11 | FILTER, NOISE | |
| W52 | 1-535-804-21 | SNAP, BATTERY | |

**********

ACCESSORIES & PACKING MATERIALS
**********

| | | | |
|---|---|---|---|
| | 1-696-454-11 | CORD (WITH MODULAR PLUG) (LINE) | (215cm) |
| | 3-861-952-11 | MANUAL, INSTRUCTION (ENGLISH) | |
| | 3-861-952-21 | MANUAL, INSTRUCTION (FRENCH) (Canadian) | |

**********

**********
HARDWARE LIST
**********

| | | | |
|---|---|---|---|
| #1 | 7-685-534-14 | SCREW +B 2.6X8 TYPE2 NON-SLIT | |
| #2 | 7-685-547-19 | SCREW +BTP 3X10 TYPE2 N-S | |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |



98C0223-1
Printed in Japan © 1998.3
**Published by Quality Assurance Dept.**